



Original Research Article

A study on the presenting features observed in 100 patients of atopic dermatitis in a tertiary care hospital in North-Eastern India

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ABSTRACT

Introduction: Atopic dermatitis is a relatively common age-related disease. Its pathophysiology is majorly insubstantial. Also, it appears as a result of interplay of maternal and inheritance, intrauterine and environmental factors. Also, immune dysregulation has an important role.

Objectives: To study the presenting features of atopic dermatitis.

Materials and Methods: 100 patients of atopic dermatitis which were diagnosed on the basis of modified UK working party criteria, after which clinical presentations were noted in a preset proforma.

Results: 78% were in the age group of 2-12 years, of which 65% were males and 35% were females.

Conclusion: Atopic dermatitis is a distinct, overt, age and IgE-related entity frequently showing different demographic and clinical presentations.

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1. Introduction

Atopic dermatitis (AD)¹ is a non-contagious, very itchy, inflammatory, chronic skin condition which follows a course of exacerbations and remissions, usually occurs in infancy and childhood, has a positive family history and a history of atopy. It has a common association with an elevated immunoglobulin E (IgE) levels in serum. It has an immunological basis and also has a genetic/familial predisposition and various environmental, life style and dietary factors. There is a constant increase in the prevalence of AD in developed nations and in countries which are presently in the phase of urbanization and industrialization. There is a complex interaction between susceptibility genes, environmental factors, skin barrier defect and systemic and local immunologic responses.²⁻⁴ The Japanese scientist couple Teruka and Kimishige Ishizaka had discovered IgE in 1966⁵ which plays an important role in inducing an allergic response, and is mainly associated with type 1 hypersensitivity reaction. Its clinical presentation shows variation; hence, it is advisable

to evaluate it periodically/seasonally.

Filaggrin insufficiency predisposes to barrier dysfunction but additionally Thelper 2 (Th2) cytokines (interleukin (IL)-4 and IL-13) can also down-regulate filaggrin expression [42], indicating a complex interplay in which the epithelia and the immune system play a role in regulating each other.

2. Materials and Methods

Cross-sectional study of 40 AD patients was conducted in Silchar medical college, silchar over a period from July 2018 till June 2019. AD was diagnosed using modified UK working party criteria,⁶ wherein presence of the major and at least three minor criteria were taken cognizance of.

2.1. Inclusion criteria

Patients fulfilling the modified UK working party criteria

2.2. Exclusion criteria

1. Patients not giving consent for history and examination.

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2. Patients who received any form of treatment for atopic dermatitis.

Clinical history which included age, sex, occupation, residence, duration of disease, associated symptoms like itching seasonal fluctuation, associated conditions like asthma, allergic rhinitis, atopy, family history of AD, and asthma were noted in a preset proforma systemic and dermatological examination was done which also included examination of the mucous membranes and skin appendages. The findings which were obtained were noted and analysis done to study the clinical presentation of AD. Categorical variables obtained are represented using absolute numbers and percentages.

Prior ethical committee clearance was obtained.

3. Results

Sex and age distribution Table 1 shows the sex and age distribution, 31 patients (78%) were in the age group of 2-12 years, while only 10 (10%) were less than 2 years of age, and 12 (12%) were more than 12 years of age.

Table 1: Age Distribution

Age (years)	Number	Percentage
<2years	10	10%
2-12 years	78	78%
>12 years	12	12%
Total	100	100%

3.1. Sex distribution

Atopic dermatitis is more common in males, seen in 65 patients (65%) out of 100. (Table 2)

Table 2: Sex distribution

Sex	Number	Percentage
Male	65	65%
Female	35	35%
Total	100	100%

Duration The duration of AD varied from 7 to 194 weeks. Its mean duration was 77 weeks with a standard deviation (SD) of 22.43 weeks [77 ± 22.43].

The frequency is as shown below-

Winter exacerbation was a cardinal feature in 75(75%) followed by history of allergic rhinitis in 45(45%), asthma in 60(60%), and atopy per se in 35(35%), whereas a family of AD was present in 25(25%)patients.

Predominant areas/location of involvement of AD were noted. It was found that the flexures were majorly involved in 52(52%) patients, extensors involved in 24(24%) patients and involvement of the face was seen in 24(24%) patients of the study group.



Fig. 1: Secondary bacterial infection in a child



Fig. 2: Xerosis in a child

Table 3: Associated features

Presenting features	Frequency	Percentage
Xerosis	80	80
Hand and foot dermatitis	80	80
White dermographism	78	78
Food intolerance	72	72
Itch when sweating	70	70
Anterior neck folds	68	68
Intolerance to wool	68	68
Course influenced by emotional factors	65	65
Tendency towards cutaneous infection	65	65
Cheilitis	58	58
Orbital darkening	58	58
Ichthyosis/keratosis pilaris	50	50
Recurrent conjunctivitis	25	25
Nipple eczema	20	20
Pityriasis alba	20	20

**Fig. 3:** Foot dermatitis in an adult**Table 4:** Site of involvement

Site of involvement	Number	Percentage
Extensors	24	24%
Flexors	52	52%
Face	24	24%
Total	100	100

**Fig. 4:** Extensors involvement in a child

4. Discussion

Atopic dermatitis, being a chronically relapsing and remitting inflammatory disease is difficult to treat. It is characterized by intense itching, erythematous, scaly and oozing papules and plaques. It is commonly associated with rising levels of IgE in serum. It was diagnosed by using the modified UK working party criteria in our study. It's prevalence was calculated to be 0.25% in our study, whereas in a study conducted elsewhere in India⁷ it was found to be 0.55%, this disease has a varying prevalence across the globe^{8,9} ranging from 0.7% to 0.26%. The

mean age at which AD has its onset was around 3.63 ± 1.42 , having the shortest duration of 1 year and longest duration of 6 years, it is in correspondence with other studies^{7,10} from the India, implying that it is disease of young children. The male to female ratio was 1.8:1 showing a clear preponderance of males over females, a finding which was similar to the study of Sarkar and Kanwar¹¹., it was found to be 1.3:1 in another study.⁷ Also, 70% of the patients belonged to urban setting, while others were from rural area (68%), a finding corresponding to an Indian



Fig. 5: Pityriasis alba in a 6 year old boy



Fig. 6: Facial involvement in a child

study.¹¹ Duration of AD had a range of 7 to 194 weeks and a mean duration of 77 ± 22.43 weeks, these results were similar to those of Dhar and Kanwar¹⁰ where the mean duration of disease at presentation was around 84 weeks. Also, a long term study showed the duration of the disease to be 288 weeks.¹¹ Itching was the main presenting feature in our study, which is in correlation with other studies from India¹¹ and other parts of the globe.¹² Sarkar and Kanwar observed that winter exacerbation was a consistent feature in atopic dermatitis¹¹ and Rddzki et al. also observed similar finding¹² In a study done at Mayo clinic, 54% patients experienced winter exacerbation.¹³ Dhar and Kanwar also noted winter aggravation.¹² In our study 45% of the patients showed history of associated asthma, 35% of the patients had history of associated atopy, and 45% showed history

of allergic rhinitis. Hanifin and Rajka showed,⁶ personal history of atopy was seen in 50% of patients with AD, while Roth and Kierland showed it to be present in 55% patients.¹² Rystedt et al. showed that 32% patients of AD had bronchial asthma and 60% suffered from allergic rhinitis.¹¹ Ellis et al.,¹⁴ observed that in the most commonly occurring co-morbidities allergic rhinitis was seen in 7% patients with AD and asthma in 5% patients with AD.

Halbert et al.¹⁵ noted that children with AD might have a significant personal history of atopy, ranging from 50% to 80%. Dhar and Kanwar¹⁰ observed that in the childhood AD group, 15.35% had a personal history of atopy. It can be observed from the above-mentioned findings that children suffering from AD have a strong history of allergic rhinitis, asthma and atopy. Also 25% of the patients showed family history of AD. In a study by Hanifin and Rajka, it was 70%⁶ 60% in a study by Roth and Kierlands,¹³ Rystedt et al showed 51% and 45% in two different groups.¹⁴ Dhar et al.¹⁶ noticed that 40% patients had family history of atopy. In another study by Dhar et al.,⁷ 65% showed family history of atopy. Minor criterion of Hanifin and Rajka⁶ criteria majorly noted in our study were xerosis and hand/foot dermatitis, white dermatographism and Dennie-Morgan infraorbital fold; 72% of patients showed history of food intolerance; 70% patients complained of itching along with sweating; 68% had wool intolerance and 65% showed secondary infection and also its course was affected by emotional factors. Around 58% patients showed cheilitis and periorbital darkening; 50% had ichthyosis or keratosis pilaris; 25% had manifested recurrent conjunctivitis. Also 20% patients showed nipple eczema and pityriasis Alba. The overall clinical presentation was similar to those of earlier studies.^{11 12} Also, 52% had involvement of flexures, 24% showed extensor involvement, whereas only 24% of the patients showed involvement of the face. Dhar et al showed similar observations.^{7 11}

5. Source of funding

None.

6. Conflict of interest

None.

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