

## CLINICAL PATTERN OF INFANTILE ATOPIC ECZEMA IN BIHAR

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The term atopy is used to define a type of allergy of which Asthma, hay-fever, allergic rhinites and urticaria are the main examples and in which a particular type of antibody, known as a reagin, is found. The type of eczema which frequently occurs in association with these conditions is therefore known as atopic eczema. Although the disease was recognised in 1891 by Brocq, who coined the term "disseminated neuro-dermatitis" to describe it; its etiology still remains obscure. Despite intensive and numerous studies over a period of many years, it has not been possible to uncover a factor or mechanism which alone accounts for the causation of atopic eczema. Rather the more diligently one has searched, the more factors have been found, and perhaps it is such a combination of factors which operate to produce the clinical picture of atopic eczema.

The clinical picture of atopic eczema differ according to the age of the patient. In infants, the lesions are erythematous, papulo-vesicular, moist and crusted, in the childhood, the lesions tend to be erythematous, papular thickened and lichenified, while in adolescents and adults, the lesions have a characteristic thickened and lichenified appearance.

The object of the present study is to report the clinical pattern of Infantile atopic eczema in Bihar.

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### Material and Methods :

The material presented in this paper is based on the study of forty cases of infantile atopic eczema out of 166 cases of this disease who attended the department of Skin & V.D. of Patna Medical College Hospital during the year 1963 and 1964. The total attendance of the department during these years was 1,12,067 and the total number of atopic eczema including all the types was 435. All the forty cases were subjected to detailed history taking physical examination and investigations.

### OBSERVATIONS :

#### 1. Incidence

The incidence of atopic eczema (including all the types) works out to be 0.38%, of the total attendance of the department during the year 1963 and 1964. Infantile atopic eczema constituted about 38% of total cases of atopic eczema.

#### 2. Age

The patients can be divided into following age groups.

Age in months	No. of cases	Percentage
Below 6 months	4	10
6 months to 12 months	18	45
13 months to 18 months	8	20
Above 18 months	10	25

Majority of the cases (45%) were between 6 months to one year. The youngest patient was 2 months old.

### 3. Age of onset

The age of onset of the disease is given in table below :

Age of onset in months	No. of cases	Percentage
1 month	1	2.5
2 months	1	2.5
3 months	3	7.5
4 months	2	5.0
5 months	2	5.0
6 months	3	7.5
7 months	2	5.0
8 months	3	7.5
9 months	3	7.5
10 months	6	15.0
11 months	5	12.5
12 months	3	7.5
18 months	3	7.5
21 months	1	2.5
22 months	2	5.0

The above table shows that onset of the disease was highest at the age of 10 and 11 months, 15% and 12.5% respectively. Upto the age of 2 months, onset was only in 5% of cases. After the age of 1 year, onset occurred in 15% of cases. The lowest age at onset was 1 month while the highest age at onset was 22 months. The average age of onset was 9.5 months.

### 4. Sex

The distribution of sex cases according to sex was as follows :

Sex	No. of cases	Percentage
Male	27	67 approx
Female	13	33 approx

Thus the male to female ratio was about 2 : 1.

### 5. Economic status

The incidence of infantile atopic eczema in different economic groups is given in table below :

Economic group	No. of cases	Percentage
Poor	23	57.5
Middle class	14	35.0
Rich	3	7.5

The above table shows that 92.5% of cases belonged to the poor and middle class.

### 6. Family History

Positive family history of atopic diseases was obtained in 27 cases (67.5%). In 3 cases there was history in more than one relative.

(a) The incidence of family history in different relatives is given in table below :

Name of relatives	No. of cases	Percentage
Grand father	5	16.6
Grand mother	3	10.0
Father	11	36.6
Mother	9	30.0
Sister	1	3.3
Brother	1	3.3

The above table shows that 66.6% had family history in parents. Grand parents accounted for 26.6% of cases. Brothers and sisters were affected only in 6.6% of cases. It appears, therefore, that atopic infantile eczema usually affects only one child of a family.

(b) Incidence of different atopic diseases in family history. It is shown in the table below :

Name of atopic diseases	No. of cases	Percentage
Asthma	22	73.3
Atopic eczema	6	20.0
Allergic rhinitis	1	3.3
Urticaria	1	3.3

The above table shows that Asthma accounted for 73.3% of cases. The atopic eczema accounted for 20% of cases.

### 7. Precipitating and Exacerbating factors :

In eight cases (20%) some exacerbating and precipitating factors were found. They are shown in the table below :

Precipitating Exacerbating factors	No. of cases	Percentage
Dietetic factors as taking cow's milk, egg, fish & tomato etc	4	10
Teething	2	5
Infective factors like pyoderma, common cold etc.	2	5
Vaccination	1	2.5

A glance at the above table shows that precipitating and exacerbating factors were present in 9 cases i.e. 22.5%. Dietetic factors accounted for 10% of cases, while teething and infective factors, each accounted for 5% of cases.

### 8. Itching

It was a feature in all the cases with varying degrees. It was severe in 20 cases (50%), moderate in 11 cases (27.5%) and mild in 9 cases (22.5%).

### 9. Seasonal flare up

4 cases showed seasonal flare up. Among these three showed seasonal flare up in autumn and spring and one case in winter.

### 10. General Health

The general health of the patient is given in table below :—

Nature of Health	No. of cases	Percentage
Fair Health	24	60
Obese	2	5
Emaciated	14	35

In the present work, the ratio between obese, emaciated and with fair health patient was 1 : 7 : 12. The general health of the patient was not affected in

mild cases. The general health was impaired in intractable cases with severe itching which led to interference with sleep. In obese patients, their parents admitted that the disease has not brought about any change in weight.

### 11. Co-existing diseases

The incidence of co-existing diseases are given in table below :

Type of disease	No. of cases	Percentage
Gastro-intestinal disturbances	2	5
Lymphadenopathy	2	5
Bronchitis	1	2.5
Pneumonia	1	2.5
Pyodermas (impetigo & boils)	3	7.5
Kaposi's varicelli form eruption	1	2.5

The above table shows that pyodermas were present in 7.5% of cases. Respiratory tract infections (Bronchitis, Pneumonia), Gastro-intestinal disturbances and lymphadenopathy, each of them were present in 5% of cases.

### 12. Skin eruption

(a) Site of onset — Incidence of the site of onset is indicated in the table below :

Site of onset	No. of cases	Percentage
Cheeks	32	80
Forehead	3	7.5
Scalp	2	5.0
Ears	1	2.5
Front of legs	1	2.5
Front of forearms	1	2.5

The above table shows that by far the commonest site of onset was cheeks (80%).

(b) Involvement of different sites — Incidence of the involvement of different sites in these cases were as under—

Site	No. of cases	Percentage
Cheeks	38	95
Forehead	32	80
Ears	20	50
Scalp	17	42.5
Neck	12	30
Trunk	5	12.5
External surfaces of arms	9	22.5
Flexor surfaces of arms	2	5
External surfaces of forearms	22	55
Flexor surfaces of forearms	7	17.5
Wrists	8	20
Hands	6	15
Ano-genital region	6	15
Thighs	5	12.5
Front of legs	23	57.5
Back of legs	6	15
Feet	3	7.5
Generalised	1	2.5

The above table shows that the most commonly affected sites were cheeks (95%), forehead (80%), front of legs (57.5%), external surfaces of forearms (55%), ears (50%) and scalp (42.5%).

### 13. Duration of illness

It is indicated in the table below :

Time in months	No. of cases	Percentage
0 to 6 months	22	55
6 months to 12 months	12	30
Above 12 months	6	15

### 14. Associated skin findings

In two cases (5%) Xeroderma was observed.

### 15. Character of lesions

The lesions were erythematous, papulovesicular, moist, oozing and crusted. In few cases, the eruptions were impetiginised. Some had excoriated or lichenified lesions from rubbing or scratching.

### 16. Complications

In the present work, one case of Kaposi's varicelli form eruptions was seen after vaccination.

### Discussion

The incidence of atopic eczema has been found to be only 0.38% of all cases attending Skin and V.D. Department of the hospital. This incidence appears to be low. This is probably due to the fact that there is relatively very high percentage of pyogenic conditions of skin during summer months and of scabies in winter months.

In the present work, the average age at onset was 9.5 months. The average age at onset was 5 months in the extensive series of Edgren (1948). In my opinion, the late onset (9.5 months) in the present work, is due to the fact that locally the people have a notion that the longer the child is fed on mother's milk, it is better for the child and hence actual feeding starts later than in western countries where feeding is usually started in 5-6 months. As is known, food allergy is a very important factor in the causation of infantile atopic eczema.

The sexes are said to be equally affected, but in the present work, male to female ratio is 2 : 1.

In the present work 92.5% of cases belonged to the poor and middle class. But this is not significant because predominantly these classes of people come to the Skin and V. D. Department of Patna Medical College Hospital.

In the present work, positive family history of atopic diseases was obtained in 67.5% of cases. Family history of allergy was obtained in 65% of cases of Albert Rowejr and Albert H. Rowe (1951). Rajka obtained family history of allergy in 68% of 1200 patients with atopic eczema. Baer found that in patients with atopic eczema, 62% had

close relation with allergic rhinitis, allergic asthma or atopic eczema. So, the incidence of family history of atopy in the present work tallies with the works in the western countries.

There are many hereditary dermatitis which are not only obscure in regard to their basis to biochemical disturbances, but also in respect of their genetic pattern. Examples of such dermatitis are atopic eczema and psoriasis.

Although we assume that atopic eczema is probably due to a dominant gene of low penetrance, its exact genetic pattern is not certain. Weiner, Zieve and Fried (1935) consider the inheritance of atopy to be due to an incomplete penetrant recessive gene, the homozygote manifesting itself in one sixth of the cases only. On the other hand, Tips (1954) who carried out genetic studies in patients with atopy, concluded that susceptibility to allergic rhinitis, allergic asthma and atopic dermatitis, each is governed by a separate recessive pair of genes. Schnydes and Klunker (1957) concluded from their genetic studies that patients with atopic dermatitis without respiratory allergies generally come from families in which there is only a hereditary tendency to atopic eczema, but that those who have respiratory allergies in addition to atopic eczema as a rule come from families with manifestation of atopic eczema, allergic asthma and rhinitis.

In the present work food allergy was observed in 10% of cases. Sulzberger and Gordman considered atopic dermatitis to be specific vascular skin hypersensitivity to food or environmental allergens. In some cases of infantile eczema, real food allergy exists (Sutton) milk is the commonest offender. Wrote Bain (1941). Evaluating elimination diets in 198 cases, Birt (1940) reported eggs worst, then tomato, orange juice, milk, fish, oatmeal and codliver oil.

In the present work, Pruritus was the only and very important symptom. It

was present in all cases in varying degrees. It may be said that if the patient does not itch, his dermatitis can not be atopic dermatitis (Pillsbury, Shelly Skligman). Itching tends to come on in crisis.

In the present work, the seasonal flare was observed during autumn and spring in 3 cases and during winter in one case. During autumn and spring, the flowers blossom and new crops are harvested. The new crops (e.g. wheat, gram, barley, various pulses) contain new protein which has high allergenic property. Gradually the allergenic power of the protein of various grains diminishes. Besides, during this period, environment is full of pollens. Comparatively less number of winter flares in the present work can be ascribed to the fact that most patients were poor and they could not afford to wear woollen clothes. As is well known wool is the commonest cause of winter flare up. Flares in atopic dermatitis are marked by extension of involvement, increase in pruritus and swelling of limbs.

In the present work, one case of Kaposi varicelli form eruption was seen after vaccination. Patients of atopic eczema have an unusual susceptibility to secondary infections with herpes simplex virus and vaccinia virus. Such episodes are called Kaposi varicelli form eruption. Often they involve only one or several of the areas affected by the dermatitis, but they can be very serious with extensive cutaneous involvement associated with high fever and lymphnode enlargement which in infants may terminate in death. It is not known whether the herpes or vaccinia virus is spread externally by contagion or haematogenously or lymphogenously or by combination of these routes.

### Summary

Detailed clinical observations on 40 cases of infantile atopic eczema are reported and discussed.

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## True

Vitiligo has been seen to be present in a statistically significant number of patients with other know autoimmune conditions like pernicious anemia<sup>1</sup> Hashimoto's thyroiditis<sup>2</sup>. primary meyxoderma, Addison's disease<sup>3</sup> etc. Circulating antibodies to Melanin in Vitiligo has been described<sup>4</sup>.

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3. Lancet 2 : 177, 1968
4. Hautarzt 16 : 209, 1965