

THE NATURAL HISTORY OF ATOPIC ECZEMA

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Abstract. A long-term follow-up study of 2 000 children with atopic eczema for from two to twenty-one years: clearance rates, pubertal recurrence rates and factors with or without prognostic significance are reported. Late onset, "reversed pattern" and possibly social factors are adverse features, whilst early onset, seborrhoeic pattern and male sex are favourable prognostic signs. These results are based on a follow-up rate better than 90% and are the first results in the literature of a prospective survey of this disease.

Key words: Atopic eczema; Prognosis; Clinical patterns

The prognosis of infantile eczema is always said to be good but the published literature is at variance with this (1, 3 and 5), most authors quoting 40-50% recovery at 15 years. In a 15-year follow-up study in Sunderland, 60% of patients with eczema had persistent trouble at 15-17 years (2). These, and other, studies all suffer from one of two major criticisms: either they were dealing with in-patients and/or they had very low follow-up rates (30-50%).

A follow-up study of 256 out-patient cases of infantile eczema in 1956 (4) showed a very favourable prognosis, based on a 95% follow-up rate.

Following that study, since 1958, a prospective survey of all cases of infantile eczema seen as Out-patients within six months of diagnosis was undertaken. Cases admitted subsequently remained in the follow-up study and no child was discharged from follow-up.

The age range in 1979 is 4-26 years. Some of these children have been followed for 20 years, but the majority for a considerably shorter period (Table I). The follow-up rate has remained remarkably high, probably because this is a prospective survey and every patient, or his/her parents, was told that they were in the series and was asked to advise any change of address. The follow-up rate in 1978 was 97% at 5 years and 95% at 20 years, although the 20-year follow-up was only on a relatively small number of patients (259).

The most important single factor which we were attempting to determine in this study was the true recovery rate of children with atopic eczema and Table II shows the clearance rate at various periods of time. It also shows the recurrence rate—it is a well-known fact that some children will clear at the age of a few months or, perhaps, within a year or two,

only to relapse either later in the childhood period or at puberty.

The next aim of this study was to determine the factors influencing the prognosis. Those factors with no influence on the prognosis include the severity of the disease at onset, the position of the child in the family, the method of infant feeding, and concomitant ichthyosis.

Prognostic factors of great significance include: age at onset and the so-called "reverse pattern" of infantile eczema. If we take age at onset first and study the clearance rate at various periods of time with various ages at onset, there is little difference in the prognosis for children whose eczema starts before 6 months vis-à-vis 6-12 months. There is a suggestion of a worse prognosis for children whose eczema starts between 12 and 24 months. The prognosis for children whose eczema starts after the age of 2 years is considerably worse (only 50% clear at 10 years). The influence of family size on the prognosis is difficult but there is a strong suggestion from the data that the only child has a worse prognosis than a child in a large family.

Clinical findings

During this study, a hitherto clinically unrecognised pattern of infantile eczema has become apparent, which has been termed the "reversed pattern". In this condition, the child develops eczema not only in the ante-cubital and popliteal fossae, but also on the knees and elbows, often with lesions on the dorsum of the wrists and hands. If one looks at the prognosis for these children (Table III) (there were 94 in my series), the prognosis was considerably worse.

Associated disease

There appears to be a slight worsening of the prognosis when the disease is associated with classical bronchial asthma, whereas allergic rhinitis and urticaria, when associated, do not appear to influence the prognosis at 10 years.

Favourable prognostic signs include seborrhoeic eczema of infancy and there is a clear favour for boys rather than girls.

Table I. *Periods of time during atopic dermatitis patients have been followed*

No. of years	No. of patients
5	1 897
10	1 410
15	698
20	259

Table II. Clearance rate of atopic dermatitis patients at various periods of time

No. of years	Clearance (%)	Recurrence (%)
5	87	4
10	91.7	5
15	90	8
20	89	9

In summary, it is clear that when taking children referred to an out-patient clinic the prognosis of infantile eczema is as favourable as we have always suspected. The reasons for the differences between this study and all previously published ones are two-fold:

First, the failure to follow-up every single child: in my study in Sheffield (4) in 1968, of those children who replied to the first questionnaire, only 50% were clear. Of those who replied to the second, 88% were clear and of those who had to be asked three or four times, or more, 100% were clear, some of them not even realising that they had, in fact, had eczema as a child. Thus, any follow-up study on a retrospective basis is inaccurate.

The study described here is a prospective study and is potentially likely to give more accurate information. It may be argued that the prognosis for these children may have been modified by the active interest taken in them by a dermatologist. If that is so, it argues in favour of the contention that the prognosis is modified by treatment and that it has improved with more active treatment, notably with topical corticosteroids.

Another reason for the improved figures in this study when compared with others may be that all children who were admitted to this study were seen within 6 months of the onset of their skin disease and treated actively. Other studies have included all children referred to out-patient departments, many of whom have been troubled throughout their lives.

The clinical observation that the "reversed pattern" of eczema, along with a late onset, worsens the prognosis has not been reported before and

Table III. Prognosis of atopic dermatitis patients with clinically "reversed pattern"

No. of years	Reversed (94) (%)	
5	61	Clear
10	57	Clear
15	54	Clear

in a new and retrospective study I have now examined 124 adult atopics with persistent eczema throughout their lives. Of these, 103 had either a late onset of their eczema, or the "reversed pattern". These facts suggest that the observations in the prospective study are, in fact, valid.

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DISCUSSION

Zachariae (Aarhus). Q: In your infantile eczema group, have you included infants with seborrhoeic dermatitis?

A: I have included in this group some 65 children with what would be described by some as infantile seborrhoeic dermatitis. Now, of these 65 the vast majority have cleared. In those whose affection has not cleared the dermatitis has slowly changed into straightforward infantile atopic eczema. I do not believe in infantile seborrhoeic dermatitis—I believe that infantile seborrhoeic eczema should be called a seborrhoeic pattern of infantile eczema.

Barnetson (Edinburgh). Q: Do you have any information in your patients on the prognosis of those who have concomitant food allergy, particularly to fish and to eggs, since these tend to be the patients with the highest IgE and with the more severe eczema?

A: I think around 6 or 7% of the children in this series had food allergy, and I think the prognosis for those children is worse. That study is not yet completed.

Q: Have you included in your material patients of families coming from India, Africa and so on and do you know anything about the prevalence of atopic dermatitis in these countries and what happens to them when they immigrate to Britain?

A: Quite surprisingly I haven't got many immigrants. Indians interest me intensely. They contract atopic eczema in the United Kingdom. They then go home for a prolonged holiday, 6 months a year, during which their skin clears entirely while at home, yet it recurs when they return to the UK. The incidence of atopic disease and atopic dermatitis, particularly in the West Indians, is very low and yet the incidence of atopic eczema in West Indian children in North West London is higher, much higher than expected. Again these children go home and the eczema clears. I can't give you any explanation.

Jones (Atlanta). Q: I would like to thank you, Dr Vickers, and congratulate you on the enormous job that could not

otherwise be done—at least not in America, because our population is so migrant. You show an 80–95% clearance rate within 5 to 10 to 15 years. Have you already selected the worst cases?

A: No, these are all general practitioner referrals. Those cases that are referred to me from pediatricians or allergists have nearly always had their disease for longer than 6 months, so they are automatically excluded. I have another study going on in cooperation with 3 general practitioners who are letting me look at the patients with infantile eczema, but whom they have considered not severe enough to warrant hospitalization. That study is now in its mid-term and these children have of course an incredibly much better prognosis.

Jones (Atlanta). Q: Might it be possible that your patients are not representative of all of the atopics born in your area, Liverpool, possibly because some of the more severe ones with asthma or bronchiolitis or whatever it might be are not coming to you?

A: I work in the largest children's hospital in Great Britain and I have a very close association with the respiratory physiologist who runs the asthma clinic, and I have looked at all the patients attending this clinic during the last 15 years. During all these years I only missed seeing a very small number, only a dozen in fact, who had atopic eczema.

Soter (Boston). Q: Some people claim that you shouldn't diagnose atopic eczema or infantile eczema in any individuals under 1 month, and I want to know how early you diagnose it. Secondly it has been claimed that episodes of acute urticaria are frequent with exacerbations of eczema and I would like to know how often you have seen this, as I have never seen it.

A: The only times I diagnose eczema of the infantile variety under the age of 6 weeks is when I diagnose the seborrhoeic pattern of infantile eczema. I have children who have an allergic reaction to food and develop urticaria and angioedema, and who within 3 to 7 days develop an exacerbation of their eczema. I am sure that it is in this way that food allergy is so very, very important in eczema—by the precipitation of attacks of urticaria or angioedema.

Rajka (Oslo): You asked whether the literature or you yourself were correct in stating the prognosis on atopic dermatitis. Since it was you who made the first reliable study, I am convinced you are right and we are very grateful to you. We cannot cure our patients, as we know, but we dare now say to all your patients and to the medical and non-medical press that the prognosis is not so bad as we earlier thought.