

From the Birmingham Chest Clinic, Birmingham 3, England.

CLINICAL FINDINGS IN CHILDREN WITH ALLERGY TO THE HOUSE DUST MITES

By

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INTRODUCTION

A study of the clinical significance of skin reactions to mite extracts in children in Birmingham, England, suffering from asthma (Smith *et al.* 1969) confirmed most of the findings of Voorhorst and his colleagues (1967) and of Maunsell and others (1968) in regard to the frequency of positive skin reactions to mite extracts in dust sensitive patients. Major skin reactions with wheals of 5 mm or more in diameter were found to occur in 77 per cent of children with perennial asthma tested by single prick method on the ventral surface of the forearm. Similar reactions in a similar percentage clinically pollen sensitive children occurred using pollen extract and much the same pattern of results was obtained when children with immediate type food allergy were tested with extracts of the relevant foods. It was concluded that allergy to house dust mites, particularly *Dermatophagoides pteronyssinus* is of considerable importance in childhood asthma. A study has been undertaken to examine further the clinical pattern occurring in association with allergy to mites.

METHOD

One hundred children attending a special clinic in Birmingham for school children with asthma were selected on the basis of having positive prick test reactions with wheals at 10-15 minutes of 5 mm in diameter or more to mite

extracts and negative reactions to various common fabrics, animal danders, foods, moulds and yeasts. Thus these children had, as far as the evidence of the skin tests was concerned, a high degree of allergy to one or more of the dust mites, *Dermatophagoides pteronyssinus*, *Dermatophagoides farinae*, *Glycyphagus domesticus* and *Acarus siro*. The onset, occurrence of associated conditions, diurnal and seasonal occurrence of asthma, and environment were then considered in each case.

Of the 100 children 74 were boys and 26 girls. The ages were fairly evenly distributed from 4 yrs to 17 yrs.

RESULTS

The age of onset of asthma is shown in Table 1. Eighty out of 100 developed asthma before the age of 6 years.

TABLE 1
Age of Onset.

Age	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10*
Number	12	14	7	25	11	11	2	4	4	3	7

* 80 per cent before the age of 6 years.

Perennial allergic rhinitis was found to be present in 29 and seasonal hay fever in one case only. This boy with hay fever had only had the condition during one summer season which might account for his negative skin test to pollen extract. Infantile eczema was present or had occurred in 25 cases.

A history suggestive of food allergy was present in 3 cases and one of urticaria in one.

In 82 cases there was a history of perennial asthma which was consistently worse at night and in some rarely occurred in the day. In 10 cases the asthma was said to be worse during the day, clearly after exercise in many of these. In 8 cases no difference was noted between day and night as far as symptoms were concerned.

Only 41 of the children or their parents volunteered a history of asthma associated with known exposure to house dust.

When asked which season of the year was associated with

most trouble 72 stated that there was no known seasonal difference, 14 were said to be worse in winter, 10 worse in summer, 3 worse in Autumn and one worse in spring.

The houses in which the patients lived were divided into those which had been erected in the last 30 years, of which there were 43, and those erected more than 30 years ago, of which there were 57. Only 7 of the newer houses were reported to be damp but 30 of the older houses were damp. It was clear that housing conditions were poor in many of these cases and definitely unsatisfactory in at least 30 per cent.

In this group 15 children had attended residential special schools for some months or years and of these 14 had greatly improved during their stay in such schools.

It is not clear how many cases of enuresis might be expected in a group of children of this age and social background but it was found that there were 16 such children of whom 13 were boys and 3 girls. Two of the 3 girls were sisters.

CONCLUSIONS

The clinical findings in children with evidence of allergy to house dust and the mites in it have been studied. These children may be expected to have developed their asthma before the age of 6 years, in 80 per cent of cases, to be predominantly boys, to have infantile eczema in 25 per cent of cases, but rarely to have food allergy or urticaria. They will have perennial rhinitis quite frequently (29 per cent) and seasonal rhinitis very rarely. The asthma will usually be worse at night and also show little seasonal variation. A high percentage may be expected to live in old and damp property and a substantial number, in this case 16 per cent, may suffer from enuresis.

These findings are not unusual. Their very ordinaryness in a group of asthmatic children tends to confirm the previous conclusion that allergy to the mites in house dust is a frequent factor in the aetiology of childhood asthma in England.

REFERENCES

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