EXPERIENCE WITH SKIN REACTIONS TO VARIOUS ALLERGENS IN BRONCHIAL ASTHMA

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INTRODUCTION

ASTHMA is a disorder characterised by partial obstruction of the airways, reversible either spontaneously or as a result of treatment (American Thoracic Society, 1962). It is classified into the intrinsic and extrinsic asthma. In the extrinsic type, the clinical features, skin and laboratory tests showed that the allergy is of Type I and Type III.

Tests to detect the allergens include the scratch, intradermal and pin prick skin tests (Herxheimer, 1975). Skin testing is feasible routinely as an outpatient procedure. The highest positive skin tests occur in the extrinsic group reacting to a wider range of allergens than in the intrinsic group.

Once the skin tests identify the allergens, then can be avoided; the patients may be densensitised or treated by disodium cromoglycate. This study helped to identify such allergens in 74 patients using the pin prick skin tests.

MATERIALS AND METHODS

All asthmatic patients, seen in the Medical Unit, Universiti Kebangsaan Malaysia in 1978, that satisfy the criteria of the American Thoracic Society (1962) for bronchial asthma were included in this study. Based on this criteria, 74 patients were selected. We obtained a complete history and performed a clinical examination on every patient. We examined the blood haematologically urine and stool microscopically, and did x-rays of the chest and sinuses as well as an ECG. Antihistamines were stopped 48 hours prior to the tests as they inhibit the reactions to the tests.

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We performed the pin prick tests on the right forearm by pricking an ordinary pin into the outermost layer of the skin through a small drop of the allergen to be tested. Care was taken that bleeding did not occur. The distance between each test sites were at least 5 cm. apart and were numbered. A positive result is a wheal of at least 5 cm. diameter, read after 15 minutes. A control test using normal saline was done simultaneously on the same arm (Herxheimer, 1975).

History of allergies that precipitated asthmatic attacks and that of collateral allergies were obtained. The results were tabulated and analysed.

RESULTS AND DISCUSSION

74 patients, 39 males and 35 females, aged between 8 and 62, comprising 30 Malays, 26 Chinese and 18 Indians, were studied. The results of our positive skin tests (Table I) are compared with other authors (Cua-Lim, 1974), Pepys (1977). Household dust topped the list which was also the experience of others (Ch, r-pin, 1974) 70% (Lewandoska, 1974) 80%, (Hobday, 1974) 60% and (Pepys, 1977) 70%. Of the food tested, shrimps (19%) topped the list which in Cua-Lim's (1975 experience were crabs (17%) and shrimps (15%). The common allergens involved, such as household dusts and mites, may be reduced by vacuuming the room and by changing the linen frequently. This brings about an eight fold reduction in the number of airborne mites. In hospital where linens are changed frequently, the frequency of attacks of asthma are reduced. Occupational history and history of pets kept as well as food habits are often neglected facet of history-taking, may provide the clue in some patients. Complete avoidance of pollen is just not possible in this country. Hyposensitisation of allergens, such as pollen, may meet with success as in some Western countries. Hence in patients with an allergic history, skin testing helps in management. Where avoidance is impossible or desensi-

Table I

Incidence of positive skin tests with various allergens in authors series compared with others

ALLERGENS	Cua-Lim [1974] %	Pepys [1974] %	Author's series [1978] %
Household Dust	39	70	81
Grass Pollens	—	66	32
D. pteronyssinus	34	69	75
Asp. fumigatus	—	16	21
Animal Dander	—	38	—
Cat Fur	13	—	35
Chicken Feather	61	—	11
Dog Hair	47	—	15
Food	—	16	—
Shrimps	15	—	19
Egg	6	—	5
Crab	17	—	5

Table II

Number of patients with positive skin tests according to age group

Age Group	Number of cases reacting with one allergen	Number of cases reacting with more than one allergens
0 — 9	6	2
10 — 19	12	8
20 — 29	20	8
30 — 39	12	4
40 — 49	6	4
50 — 59	4	0
60 and above	0	0
Total	60	24

Table III

Average number of allergens causing positive skin reaction by age group

Age	Average number of Allergens
0 — 9	2.5
10 — 19	4.5
20 — 29	5.2
30 — 39	2.6
40 — 49	3.0
50 — 59	2.5

tisations fail, disodium cromoglycate will be of aid in some asthmatic patients. Monovalent allergy is better inhibited than multiple allergies. The incidence of positive skin tests (Table II) is highest in the age group 10-29 (55%). The average number of allergens causing positive reactions (Table III) is highest in the age group 10-29. Thus extrinsic asthma produced the most positive tests under the age of 30 years, reacting with a wide range of allergens. This tallies the experience of Pepys (1971).

Rhinitis was found in one half of our patients. Pepys (1971), Cua-Lim (1974) and Charpin (1977) found rhinitis in 36%, 60% and 49% respectively in their series. 20% of patients had eczema, though Charpin's (1977) figure was higher (35%). About half of those with infantile eczema developed asthma (Pepys, 1977).

SUMMARY

This study was proposed to determine the allergic states of patients in the Medical Unit University Kebangsaan Malaysia that satisfy the American Thoracic Society (1962) criteria for bronchial asthma. 74 patients, 39 males and 35 females, were selected. We performed pin prick skin tests on them. It was noticed that the extrinsic group of patients showed the highest positive skin tests with a wide range of allergens. The commonest allergens were in our experience. *D. pteronyssinus* in dusts and shrimps among food. The highest reactors belong to age group 10-29. Rhinitis tops the list of collateral allergic conditions. This being a pilot study, it is hopefully believed that it will be

taken advantage of by other clinicians before attempting desentisation procedure.

ACKNOWLEDGEMENT

I am grateful to Prof. Kannan Kutty for a critical review of the manuscript, Puan Baridah for the secretarial help, the library staff of the Medical Faculty for the references.

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