MATERIAL AND METHODS
MATERIAL AND METHODS

The study was undertaken at the Allergy Clinic, Immunology and Biochemistry Laboratory, Department of Pediatrics, M.L.B. Medical College, Hospital, Jhansi.

SELECTION OF CASES

Present study comprised of patients having allergic disorders like - allergic asthma, allergic rhinitis and/or urticaria. Cases were selected from patients attending the allergic clinic, which were referred from General Pediatric OPD, ENT and SKIN OPD.

Diagnosis was based on detailed history, clinical examination and relevant investigations. Cases belonging to various socio-economic strata and occupations were included in the study.

Besides name, age, sex, address and socio-economic status of children, following facts were recorded in each case.

PRESENT, PAST AND FAMILY HISTORY

From parents or other family members detailed history was obtained regarding present illness, in chronological order. Emphasis was given to age of onset of first attack, frequency per year, symptom free period and precipitating factors for illness.
In the past history, history of worm infestation, atopy, asthma, bronchiolitis, and definitive history of pertussis and measles was elicited.

In the family history, history of atopy, urticaria, asthma, eczema, hay fever etc. was also recorded. An enquiry was made about the definitive history of tuberculosis of parents, siblings, near relatives and neighbourhood.

Relation of occurrence of symptoms with season, particularly months, hour of day, and place was outlined. Any recent change in residence and/or occupation was noted. History of any sort of animal contact was also enquired.

**IMMUNIZATION HISTORY**

History of immunization was taken from the parents or family members. For B.C.G. vaccination, confirmation was done from the scar mark.

**SOCIAL HISTORY**

A detailed account of the living conditions of the patient was made with special reference to the type of rural or urban area, of house (Kaccha/pacca),/floor, water supply and toilet facilities. The status of hygiene was noted.

**PHYSICAL EXAMINATION**

Besides routine physical examination of the whole body, weight of patients was also noted and a record of the detailed examination of the system(s) involved was made. Thorough clinical examination was done especially to
observe skin changes, wheezing, episodes, rhinorrhoea and sneezing.

Cardiovascular, respiratory and central nervous systems were examined in each case and abdomen was specifically examined for liver enlargement and spleen enlargement.

Children with bronchial asthma were assessed on the basis of their personal history of allergy, family history of allergy, degree of eosinophilia and the age of onset of illness.

Urticaria was considered acute if symptoms had been present for less than 8 weeks and chronic, if symptoms had persisted beyond 8 weeks before reporting. Physical test to determine the cause of urticaria included dermatography test (by firm stroking of the skin) and pressure stimuli.

Foods were incriminated as the exciting cause of urticaria by history, ingestion test and elimination tests. The drug allergy was examined by oral challenge test in patients with a history of urticaria, following ingestion of certain drugs. Infection and worm infestation, as the precipitating or perpetuating cause, were determined by history, physical examination and stool examination. Disappearance of urticaria on successful treatment of the infection or worm infestation confirmed the diagnosis.
INVESTIGATIONS

The following investigations were carried out:

1. Peak expiratory flow (litre/minute) by peak flow meter.
2. Stool examination for ova and cysts.
3. Eosinophil count.
4. Skin testing by modified prick method.

ALLERGENS

Commercially available prick test solutions containing aqueous allergen extracts, were used. The extracts contained 50% glycerol and were preserved in 0.4% phenol. Alergens included from fungi, insects, pollens, dusts, danders, and food substances. Details under each group were as follows:

Fungus: Aspergillus, flavus, Aspergillus fumigatus, Candida albicans, Cladosporium, herbarium.

Insects: Ant, cricket, house fly, mosquitoes.


Dusts: Cotton dust, wheat dust, house dust.

Danders: Dog dander.

Food: Egg white, Milk, dal arhar, dal massor.

Buffer/Histamine solution served as positive control while saline solution was used as negative control.
METHOD OF SKIN PRICK TEST (SPT), MODIFIED PRICK TEST

The most common site for skin testing is on the flexor side of the forearm. The skin was first cleaned with savlon and spirit, then the skin was marked, using a felt tip pen, 3-4 cm apart in two rows. Testing solutions (all the available allergen extracts) were subsequently placed at the sites marked with pen. The negative control (saline) was placed near the top of the arm, followed by the allergen extracts. The test sites were approximately 4 cm apart, one small drop of test solution was applied on the skin.

A sterile needle (No. 21) was introduced in the epidermis epicutaneously, through a drop of allergen extract. The needle was introduced into the skin at an shallow depth. This was repeated for each drop of solution. Separate needle was used for each solution. Any excess solution remaining on the skin after prick was made, was removed by placing a paper tissue over the upper arm for a moment or two. Precaution was taken that no blood was drawn during testing.

The results were read after 20 minutes when positive reaction would appear as an induration surrounded by wheal and flare. Any wheal and flare produced by the negative control was substrated from any reactions produced by other allergens before they were assessed. The results were recorded by measuring wheal and flare with the help of divider and scale. Grading was done as follows:
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Symbols</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheal and flare were only very small</td>
<td>+</td>
</tr>
<tr>
<td>Reaction larger but not as large as the positive control.</td>
<td>++</td>
</tr>
<tr>
<td>Reaction similar to or greater than the positive control or reaction with pseudopodia.</td>
<td>+++</td>
</tr>
</tbody>
</table>

Patients were asked to discontinue (at least for 5 days) any medication that they were receiving for their allergic condition prior testing, as antihistamines and corticosteroids in high dosages could have affected the results of the test.