



Allergic Diseases – A Brief Review

Surya Kant

**Department of Tuberculosis and Chest Disease,
King George's Medical College, Lucknow 226 003, U.P., India**

ABSTRACT

Allergic disorders are major health problem prevalent in our country due increasing urbanization, industrialization and environmental pollution. The mast cells and basophils are the effector cells causing hypersensitivity responses. The most common allergic disorders are allergic asthma, rhinitis, conjunctivitis, alveolitis and urticaria. For treatment, the most commonly drugs used are antihistamines however hypo sensitization is debatable mode of treatment although helpful in a large number of allergy patients.

Key words: Allergic disorders, Hypersensitivity response, Asthma, Rhinitis, Conjunctivitis, Alveolitis and Urticaria.

INTRODUCTION

Allergy is a major health problem in our country and is increasing day by day with the urbanization, industrialization and the so called modernization. Environmental pollution is the major contributor for various allergic disorders.

The tissue mast cell and the circulating basophil are the important effectors cell causing immediate type hypersensitivity responses. There are of course other mediators of allergic inflammation and these are Arachidonic acid derivatives such as prostaglandins, leucotrienes and thromboxanes. There are other mediators such as platelet activating factor, heparin, kinins, histamine factor and so on.

The common allergic disorders in our country are as following viz. allergic asthma, allergic rhinitis, allergic conjunctivitis and food allergy urticaria

Allergic Asthma

The etiopathology of asthma is very much complex. There is a distinct entity of allergic asthma or extrinsic asthma described in various text books. It is characterized by a clear provocation by recognized allergens. This variety is common in generally younger individuals and other atopic disorders such as infantile eczema, urticaria and allergic rhinitis often coexist. There is also a seasonal exacerbation element, especially before winter and rains in our country.

Allergic Rhinitis

About 10% of population is affected by this disorder. It occurs as a result of immediate type hypersensitivity to various allergens like, pollen, fungal, spores, house dust, animal dander, smoke. It can also be precipitated by physical or chemical irritants such as pungent smells or even dry air, cosmetics, spices and psychogenic factors like stress. The allergic component in these situations thus becomes unclear; hence the term vasomotor rhinitis is more appropriate than chronic allergic rhinitis.

The presenting signs and symptoms are sneezing, profuse watery rhinorrhea, concomitant conjunctivitis, pharyngeal and conjunctival itching and foreign body sensations, lacrimation. The mucosa of the nasal passages is swollen and congested and the conjunctiva too appears red and oedematous. Secondary bacterial infections may make the discharge purulent. In chronic cases, nasal polyps can lead to nasal blockage.

Allergic Conjunctivitis

It often occurs in conjunction with allergic rhinitis, but at times can present as a separate entity. Various terms like seasonal allergic conjunctivitis, perennial allergic conjunctivitis, vernal kerato conjunctivitis, atopic kerato conjunctivitis and giant papillary conjunctivitis are used to describe the subtle variations in clinical presentations, but the underlying pathogenesis is similar in all cases. The provocative agents are once again pollens and the main symptoms are lacrimation and itching with some foreign body sensation.

Food Allergy

The commonest food items known to cause allergy are egg, fish and cow's milk. The manifestations can be in the form of rhinitis, asthma, itching, skin lesions, headache, nausea, vomiting, gastrointestinal distress including colic and diarrhea. The possible cause of these allergies is supposed absorption of small quantities of certain proteins present in the offending food in the intact form, which should have been otherwise digested by the gastrointestinal enzymes. Such is the case with egg, which may cause allergy if taken raw but may be safe after cooking. Similarly, infants who are allergic to pasteurized milk are known to tolerate boiled milk, evaporated milk or casein, converted from milk. Lactoalbumin and Lactoglobulin are the allergic components of milk.

Urticaria

This is the commonest dermal manifestation of immediate type hypersensitivity. It is characterized by wheals which are well defined areas of oedema that is transient and resolves within a few hours. The borders of the lesion are often red and wavy. If the oedema spreads to the underlying epidermis, the condition is termed angio-oedema. Acute urticaria can occur on any part of the body but if it affects the lips, tongue and pharynx, then there is the real danger of obstruction to air flow with even imminent death. Urticaria can be precipitated by many agents including common food items like eggs, banana, prawn and milk (in children especially). Animal fur, drugs, including antibiotics, aspirin and non-steroidal anti-inflammatory agents (NSAIDs), etc are additional agents known to cause urticaria.

If the skin lesions do not resolve within hours or days but persist for more than 6 weeks, the term chronic urticaria will apply.

Diagnosis

Diagnosis of various allergic diseases is made mainly by clinical evaluation, however, there are certain tests which are helpful in making the final diagnosis and these are:-

1. In-vivo test

- a. Skin test (allergy testing).
- b. Mucous membrane sensitivity test viz conjunctival tests.
- c. Bronchial provocation test.
- d. Patch test.
- e. Prausnitz Kustner (P.K.) test.

2. In vitro test

- a. Radio-Allergo Sorbent test (RAST).
- b. Enzyme Linked Immuno Sorbent Assay (ELISA).

Treatment

The most important step in the management of allergies is avoidance of contact with the allergen. This is however not easily achieved in many instances, even if the allergen has been identified with some degree of precision. It has thus become necessary to use anti allergic agents in the clinical management of these disorders.

Antihistamines constitutes the most frequently prescribed class of agents in allergy therapy. The commonly used antihistamines are as follows:

1. Alkylamines	4. Piperidines
Chlorpheniramine	Astemizole
2. Phenothiazines	Loratadine
Promethazine	Terfenadine
3. Ethanolamines	Azatadine
Clemastine	Cyproheptadine
Diphenhydramine	5. Piperzines
	Hydroxyzine
	Cetirizine

Other drugs that are of value in the management of allergies are cromolyn and nedocromil which inhibit mast cell de granulation and thus prevent mediator release.

Corticosteroids are powerful anti-inflammatory agents which can abolish all symptoms and signs of allergies of any type. But their long term use is fraught with complications of a serious nature and hence not recommended barring severe cases. Steroid inhalers are, however, safe and are now used as main protective drugs in asthma for several years. Hyposensitization therapy is debatable since beginning but it may be helpful in certain groups of patients.

REFERENCES

- Agnihotri, M.S. 1985. Bronchial Asthma and Environment. *Ind. J. Tub.* 32, 57.
- Bell, J.J. and O'Hehir. 1996. Immune mechanism of disease. In, *Oxford Textbook of Medicine*. Oxford University Press, 154.
- McFadden, E.R. and Gilbert, J.A. 1928. Asthma. *New Eng. J. Med.* 1992, 327.
- Frew, A.J. and Holgate, S.T. 1996. Asthma In *Oxford Textbook of Medicine*. Oxford University Press, 2733.
- Rees, J. and Price, J. 1995. ABC of asthma. *BMJ Publishing Group*. 3.
- Babe, K.S. and Serafin, W.E. 1996. Histamine, bradykinin and their antagonists. In, Goodman and Gilman's. *The Pharmacological Basis of Therapeutics*, Ed. Molinoff P. B. and Ruddon R. W. McGraw Hill, 592.
- Cropton, G.K. and Haslett, C. 1995. Disease of the respiratory System. In, *Principles and practice of Medicine*, ed. Edwards CRW et al. Churchill Livingstone, 393.
- Swaminathan, M. 1991. Human nutrition and diet. Bappco Publishers, 137.