REVISION CORNER
IMMUNOLOGIC FUNCTION

By
T. K. MEHTA*

No organ has contributed to the science of Immunology so much as the skin. Antigen-antibody reaction is best demonstrated on the skin and partly also in mucous membrances. All the diagnostic tests and prophylactic and therapeutc injections for various infectious diseases and allergic disorders are carried out on skin. Among such tests are tuberculin for tuberculosis, trichophytin for ringworm, for Brucella infection, lepromin for leprosy, Schick test, Dick test, Frei's for lymphopathia venereum, Ito-Reensterina for chancroid and many others. When immunity is ineffectual or distorted allergy results. As such allergy is a partial or ineffective immunity because it is also based on antigen-antibody reaction.

Allergy: Thus it will be seen that allergy is a physiologic disorder of the immunologic function of skin.

It was von Pirquet who first coined this term "Allergy" which means altered reactivity or hypersensitivity. Allergic reactions comprise not only specifically acquired hyperreactivity (hyperergy) but specifically acquired immunity (anergy) as well. The alteration of reactivity should be specific to be classed as allergic.

CLASSIFICATION OF ALLERGIC PHENOMENA

Sulzberger and Goodman defined allergy as an altered state of reactivity by a first contact and made manifest by subsequent specific contact. The term "Allergy" therefore must include acqired hypersensitivity, hyposensitivity, and absence of sensitivity, all probably due to closely allied mechanisms viz. Antigen-antibody reaction in the target or shock organ (skin, lungs etc.) producing various chemicals like histamine, serotinin and cholinergic substances which all combined produce the final clinical picture. Various other factors also influence allergic incidence all of which are given below.

I. Anaphylaxis: These are sudden unpredictable and sometimes fatal reactions occuring commonly in laboratory animals.

II. Human Allergy: Atopic and non-atopic.

1. Atopic: (a) constitutional allergy. Family and personal history of allergy like asthma, eczma etc. available.

(b) Eosinophilia in blood smears and secretions.

(c) Positive scratch and intracutaneous tests with wheal. Patch tests negative.

(d) Prausnitz-Kustner phenomenon present (i. e. presence of circulating antibodies.)

*Chief, Skin and V.-D. Department, T. N. Medical College and B. Y. L. Nair Charitable Hospital, Bombay 8.

(e) Allergens are atopens and may be anything from pollens, foods, drugs, dusts to bacteria, insects, spores and vaccines.

2. Nonatopic: (a) Contact allergy by far the commonest and possibly the largest group of eczemas caused by various external medicaments, cosmetics and other contactants like occupational and industrial.

(b) Drug allergy : by systemic route.

(c) Allergy of infection & Infestation.

(d) Foreign protein allergy: serum sickness, anaphylaxis, Arthus phenomenon.

(e) Physical allergy (not strictly according to definition).

Forms of Allergic reaction :

Atopic reactions favour the mucous membranes of nose, conjunctivae the bronchioles and vascular apparatus of superficial cutis. Contact allergy usually involves epidermis. The reaction may be localized in any one shock organ or generalized as allergic shock.

Diagnosis : Symptoms and signns of allergy are not unique; all may be produced by non allergic mechanisms, by unrelated stresses e. g. irritant dermatitis and contact (allergic) dermatitis will look alike clinically and histologically. Urticaria may be atopic allergy or may be due to acute anxiety. Diagnosis will depend on history, repetition of clinical syndrome, and skin tests for allergy. Thus allergy is easier to comprehend then to define. The mechansisms and expressions of allergy are so diverse that no causal definition suffices for all of them.