Clinical and pharmacologic studies have included the development of a method to reproduce the lesions under controlled conditions using a vibratory stimulus for a preselected time to local areas. Volumetric measurement of these areas before and after stimulation is recorded. Changes in forearm circumference have also been used as a simple and reliable test. A search for evidence of mediator release was attempted using blood from the antecubital vein followed by photofluorometric and bioassay for plasma amines. A rise in plasma amines was obtained, but the amine has not been identified as yet.

Pharmacologic studies have shown that pretreatment with a β-adrenergic stimulator (isoproterenol) will effectively block the local and systemic reaction. Epinephrine and diphenhydramine have been shown to modify the response. Aspirin, hydroxyzine, ephedrine, and propranolol have no effect.

44. The administration of radiographic contrast media to patients with a history of a previous reaction. John N. O'Rourke, Jr., M.D., Roy Patterson, M.D., and James Nicholson, M.D., Chicago, Ill.

The history of an immediate-type systemic reaction to radiographic iodinated contrast media (RICM) is of considerable concern when the patient requires subsequent RICM for essential diagnostic procedures. Because of the lack of evidence of IgE mediation of such reactions and the apparent necessity for RICM studies in certain patients, a group of these patients was evaluated, and some of them received RICM on a second occasion.

Forty-four patients were referred to us for evaluation because of histories considered to indicate a previous reaction that would contraindicate the use of radiographic iodinated contrast media.

The previous reactions in 13 patients were either nonexistent or so doubtful that there appeared to be no increased risk, and they received RICM without reactions. Twelve received no RICM because of the lack of sufficient medical diagnostic indication to subject them to any risk.

Nineteen patients were evaluated who had immediate-type generalized reactions and appeared to require RICM as an essential diagnostic test. Five of these had retrograde pyelography without reactions. Cautious, graded-dose administration of intravascular RICM was carried out in the other 14 patients. Five patients had minimal or moderate systemic reactions, which is a significantly higher incidence of reactions than in the general population. There were no serious reactions. Skin tests with RICM were negative in all patients including those with a second reaction.

The results indicate that RICM may be given cautiously to patients with a previous reaction, following a careful evaluation, if the diagnostic study is essential.


Competitive protein-binding radioassay methods are widely used for measurement of plasma cortisol concentrations, but little attention has been given to the possibility that administered corticosteroids might interfere with the assay. In this study, plasma steroid concentrations were measured in asthmatic children before and after oral administration of prednisone and methyl-prednisolone (Medrol). Before treatment, the results of the protein-binding assay were similar to those obtained with a fluorometric method. After administration of prednisone (2.5 to 60 mg.), the protein-binding method revealed increased steroid concentrations in all subjects. The magnitude of the plasma steroid concentrations as well as the increment over control values rose progressively as the prednisone dose increased. The highest steroid concentrations were observed within one hour after treatment; plasma steroid levels remained elevated for at least 4 hours and in some patients for as long as 8 hours after therapy. In contrast, when samples were assayed with a fluorometric method, which
does not detect prednisone, steroid concentrations after treatment were lower than those of control specimens. Medrol had less influence than prednisone on the protein-binding method, but increments in plasma steroid concentration were also observed after treatment with large doses of Medrol. Additionally, steroids extracted from tablets of prednisone and Medrol competitively displaced labeled cortisol from the binding protein. Thus, the protein-binding method does not provide a reliable index of endogenous corticosteroid concentrations when the assay sample contains either prednisone or Medrol.

46. Prevalence of allergic diseases, penicillin hypersensitivity, and aeroallergen hypersensitivity in various populations. Rishon H. Stember, M.D., and Bernard B. Levine, M.D., New York, N. Y.

The purpose of this study was threefold: (1) to determine the prevalence of several allergic diseases in a population of adults; (2) to determine the prevalence of reaginic hypersensitivity to aeroallergens and penicillin hapten in patients with or without ragweed hay fever; and (3) to determine the prevalence of immediate skin reactivity to penicillin hapten in ragweed hay fever patients, in asthmatics, and in nonastatics. Previous studies have often concluded that patients with asthma and allergic diseases have increased risk of penicillin reactions. Adults (17 to 80 years), males and females, being examined at a multiphasic screening center of a health maintenance organization, were studied. Histories and allergy skin tests were done. Allergen extracts were ragweed, Alternaria, and cat at 10 protein nitrogen units (PNU) per milliliter, trees at 100 PNU per milliliter, benzylpenicilloyl polypeptide (BPL) at 10^{-4}M, K penicillin G (KPG) at 10^{-2}M, and a penicilloate-penilloate mixture (PP) at 10^{-3}M each. Criteria for history of asthma were wheezing, reversal by medication, minimal sputum production, and at least one episode requiring medication in past year. Criteria for ragweed hay fever were seasonal rhinitis/(asthma) for at least 2 past seasons, with 2+ to 4+ skin tests to ragweed (10 PNU per milliliter). Results were: Out of 1,043 subjects, 51 (4.9 per cent) had asthma; of 1,043 subjects, 140 (13.4 per cent) had allergic rhinitis to one or more allergens; of 1,043 subjects, 102 (9.8 per cent) had ragweed hay fever; of the RHF group (102 subjects), 44 per cent reacted intensely to grass, 26 per cent to trees, and 3.9 per cent to penicillin hapten; of the non-RHF (925) subjects, 3.2 per cent reacted intensely to grass, 2.1 per cent to trees, and 4.5 per cent to penicillin hapten. Positive skin tests to penicillin hapten were found in 2 of 51 asthmatics (3.9 per cent), in 3.9 per cent of RHF, and in 34/770 (4.4 per cent) of subjects who had no history of asthma and were skin test negative to the pollen, cat, and Alternaria allergens. Results indicate that subjects with ragweed hay fever relative to controls have increased immediate allergy to several aeroallergens but not to penicillin hapten. Prevalence of immediate hypersensitivity to penicillin hapten including the minor determinants was not increased in asthmatics nor in ragweed hay fever subjects relative to nonallergic controls.


Further evidence of the existence of a human self-marker system (Transpl. Abstracts, p. 34, Sept., 1972) was sought in a patient with chronic mucocutaneous candidiasis and 10 family members spanning 3 generations. Each individual was haplotyped on the basis of tissue histocompatibility antigens. Measures of immune function were used to construct data matrices and solved for variation between dependent variables and responses associated with each haplotype. Significant inverse correlations were identified within the family between serum IgM levels and anaphylactic hypersensitivity ($r = -0.9755$, $p = 0.0111$) and serum IgM and IgA levels ($r = -0.9574$, $p = 0.0270$); a direct correlation was detected between serum IgG levels and the delayed cutaneous hypersensitivity ($r = 0.9549$, $p = 0.0297$). Significant differences in IgA levels were associated with the B (HL-A 11, 7) and C (HL-A