ALLERGY ABSTRACTS

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Asthma and hay fever

Cockroaches in relation to bronchial asthma in the Durban area

Fraser BN: S Afr Med J **55**:637, 1979.

A study was carried out to determine if cockroach sensitivity could be demonstrated in an urban asthma clinic in Durban, South Africa. Patients treated previously at the clinic had experienced deterioration of their asthma during the hot, humid summer months, while those patients who had previously lived in rural districts found that their attacks of asthma actually either began or became worse when they moved to Durban. Although house dust had been thought to be a predominant causative factor, insect allergy was also considered to be significant because of Durban's notoriety for heavy cockroach infestation.

Thirty patients, all of whom were individuals in a low-income group, were given skin-prick tests to multiple antigens, including house dust, house dust mite, animal dander, and a variety of tree and grass pollens as well as various molds. Insect testing was limited to the German cockroach antigen. The American cockroach antigen was not available for testing, and other types of insect antigen were excluded from consideration. The amount of antigen employed in the prick test was not indicated. A 3+ reaction consisted of a wheal of 3 to 5 mm in diameter and erythema, while a 4+ reaction was considered to be anything larger than the 3+ response. The results showed that only 7% of the patients had 3+ to 4+ skin-test reactivity to grass or tree pollen or to mold, whereas 30% had 3+ to 4+ reactivity to cockroach and animal dander antigens, respectively. Eighty percent of the subjects showed a 3+ to 4+ response to house dust or house dust mite antigens, respectively.

Although the house dust mite appeared to be a very potent cause of asthma in this group of 30 patients, cockroach apparently played an important role as well. It was thus concluded that the cockroach antigen should be included in testing and considered in desensitization programs for asthma patients living in the Durban area.

B. Kahn

Immunology

Antigens in penicillin allergy. IV. Induction of IgE antibody response in mice after treatment with contaminated but not with pure penicillin

Kristofferson A, Ahlstedt S, Hall E: Int Arch Allergy Appl Immunol **60**:295, 1979.

The induction of IgE antibody production to pure and contaminated penicillin, respectively, was studied in female CBA mice injected with pure benzylpenicillin (Bp) alone, Bp contaminated with varying amounts of penicilloyl 26-bovine gamma globulin (PO26-BGG), or Bp and PO26-BGG plus *Bordetella pertussis* as an adjuvant, respectively.

Injection of mice with pure Bp did not result in the formation of IgE antibodies against the penicilloyl determinant, while injection with PO26-BGG or PO26-BGG alone did induce IgE production. *B. pertussis* bacteria did not act as an adjuvant when added to pure or contaminated Bp, and in some cases it hindered IgE production. The IgG and IgM responses to the pure Bp were negligible, while mice treated with Bp contaminated with PO26-BGG and those given the contaminant alone all formed an amount of IgG and IgM antibodies proportionate to the amount of the contaminant

injected. Those treated with Bp or PO26-BGG plus *B. pertussis* also developed a significant antibody response (mostly of the IgM class) against the penicilloyl determinant.

The authors conclude that, based on the lack of antibody response, particularly IgE to pure Bp, sensitivity to penicillin can perhaps be diminished if the contaminating impurities in commercially available penicillin are minimized.

Juana C. Phillipp

A study of HLA-A, B, C, and DR specificities in pigeon breeder's disease

Rodey GE, Fink J, Koethe S, Schlueter D, Witkowski J, Bettonville P, Rimm A, Moore V: Am Rev Respir Dis **119**:755, 1979.

While numerous persons are exposed to antigens in pigeon material, only from 4% to 20% develop the symptomatic form of the acute or chronic interstitial pneumonitis called pigeon breeder's disease (PBD). This suggests that host factors, presumably genetic, might determine disease susceptibility and expression in those exposed to the antigens.

The authors studied the HLA-A, B, C, and DR antigens in 51 symptomatic breeders, 102 asymptomatic pigeon breeders, and 100 normal healthy subjects. Spirometry, flow-volume loops, diffusing capacity, and arterial blood gases were determined before and after inhalation challenge with pigeon sera in symptomatic subjects. These subjects manifested fever, leukocytosis, and restrictive changes 4 to 6 hr after inhalation challenge. The 102 asymptomatic subjects subjected to spirometry before and after similar inhalation challenge did not manifest clinical or pulmonary functional changes suggestive of interstitial fibrosis or PBD. The HLA-A, B, and C loci–determined antigens of the subjects were demonstrated by the microcytotoxic technique using established antisera. DR typing was performed on B cell–enriched fraction. Thus, no alteration was found in the frequencies of antigens determined by HLA-A, B, C, and DR loci genes in both the symptomatic and the asymptomatic pigeon breeders as contrasted with normal subjects.

Though numerous members of different families were exposed to antigen, in only one family did a symptomatic parent and child share HLA identity. Another HLA-identical sibling remained asymptomatic.

These authors were therefore unable to demonstrate an association between an HLA phenotype and susceptibility to PBD. Also, the previous observation of increased association of HLA-B8 and HLA-Bw4 and PBD was not corroborated by this study. Further, the ideal control group, namely, the group that remained asymptomatic despite exposure to pigeon antigens, did not manifest any decreased association with any HLA phenotype as contrasted to normal subjects or symptomatic individuals.

The data suggest that HLA complex–associated or –linked genetic factors do not play a part in the pathogenesis of PBD in individuals exposed to pigeon serum.

M. R. Murali

Miscellaneous allergies

Food allergies and migraine

Grant ECG: Lancet **1**:966, 1979.

A preliminary pilot study at a headache clinic had shown the importance of oral contraceptives, ergotamine, and smoking as causative factors of severe migraine. However, since most patients restricted from these precipitating factors continued to have headaches, it was decided to investigate the possibility of food allergy as a major cause of or contributor to the migraine syndrome. The study was carried out over a period of 2 yr and involved 52 women and 8 men, ranging in age from 18 to 63 yr, with an average duration of migraine syndrome of from 18 to 22 yr. An estimate was made of the average number of headache days per month over a 3-mo period before and after food testing. The headaches included both "classical migraine" (with visual disturbances) and "common migraine" (without visual disturbances).

The possibility of food allergy in these patients was investigated by means of food elimination regimens and challenge. Lamb, pears, or two other "low-risk foods" as well as bottled spring water constituted the entire diet for 5 days following which from one to three common foods were tested daily by simple oral challenge, until approximately 40 to 50 foods had been tried. Pulse rates and symptoms were recorded prior to and at 20-min intervals for 1.5 hr after each "new" food was returned to the diet.

The 60 patients tested in this way recorded over 600 reactions with the average patient showing a response to 10 different foods. The most common foods causing symptoms and/or pulse changes were wheat, orange, egg, tea, coffee, chocolate, milk, beef, corn, cane sugar, yeast, mushrooms, and peas. Following elimination of these foods, all patients improved, and there was a dramatic fall in the number of headaches or migraine days per month, with 51 (85%) of the patients becoming completely headache free. Only 9 (15%) still had a problem with headaches or occasional migraine attacks. An average of 115 tablets of medication had been required monthly by each patient prior to the restricted diet. Following specific food elimination, the average dosage had decreased to 0.5 tablets per month. It was thus concluded by the author that food allergy plays a major role in the pathogenesis of migraine and both immunologic and nonimmunologic mechanisms are involved.

B. Kahn

Pediatrics

Transfer factor therapy in the Wiskott-Aldrich syndrome: Results of long-term follow-up in 32 patients

Spitler LE: Am J Med **67**:59, 1979.

Prior studies have indicated that transfer factor (TF), a dialyzable extract of leukocytes, has been beneficial in the

treatment of patients with the Wiskott-Aldrich syndrome (WAS) (eczema, thrombocytopenia, and recurrent infections). This report summarizes the clinical and immunologic results in 32 patients with WAS treated with transfer factor.

Thirty-two patients (aged 4 mo to 16 yr) with WAS, following clinical evaluation and immunologic testing, received a subcutaneous dose of transfer factor (derived from 5×10^8 lymphocytes). Immunologic testing was repeated 10 days after treatment, and included in vitro measurement of lymphocyte stimulation (radioactive thymidine incorporation), production of migration inhibitory factor (MIF), and in vivo skin testing for delayed hypersensitivity with a panel of antigens, i.e., candidin, dermatophytin O, coccidioidin, mumps, purified protein derivative, streptokinase-streptodornase, and trichophytin, respectively. Most of the patients received TF injections at 6-mo intervals.

Of the 32 patients, 14 (44%) demonstrated clinical improvement (a decreased incidence and/or severity of infection, diminished eczema and bleeding tendency) after the initial dose of TF; 13 of 30 patients (43%) survived a 5-yr mean period of follow-up. The mean age of the patients who demonstrated clinical improvement (7.1 ± 1.4 yr) was significantly greater ($p = 0.02$) than those who did not improve (3.5 ± 0.7 yr). At the end of 1 yr, 12 of 15 patients (79%) who improved clinically were alive compared with only 8 of 15 (51%) who did not improve ($p > 0.1$). The mean survival (greater than 5 yr) of the former group exceeded that of the unimproved group (18 mo).

Following the administration of TF, conversion of skin-test reactivity was observed in 18 of 30 (60%) patients, lymphocyte stimulation in 1 of 18 (6%), and MIF production in 6 of 11 (55%); 19 of 32 patients (59%) demonstrated conversion of at least one immunologic parameter. The mean age of those patients who demonstrated immunologic conversion (6.1 ± 1.1 yr) was not significantly greater than those who did not (3.5 ± 0.9 yr). A significant correlation ($p < 0.005$) was observed between immunologic conversion and clinical benefit.

The author concludes that TF therapy produced conversion of immunologic parameters and apparent clinical improvement and prolonged survival in approximately one half of the patients with WAS; she also suggests that renal disease, hemolytic anemia, protein-losing enteropathy, and atherosclerosis may be additional, previously unrecognized, clinical features of this syndrome.

S. B.

Cellular immunity in children with acute rheumatic fever and rheumatic carditis

Meric N, Berkel A: Pediatr Res **13**:16, 1979.

Well-documented alterations in humoral immunity occur in acute rheumatic fever (ARF). There is much evidence to suggest that changes in cell-mediated immunity (CMI) take place as well in this condition. However, the exact role of CMI in ARF has never been established. The present study was undertaken to determine what specific role CMI plays in the pathogenesis of rheumatic carditis.

Seventy-four children between the ages of 4 and 16 yr with ARF were divided into three groups. The first consisted of those with ARF and active carditis; the second included those with ARF without carditis, and the third included patients with inactive RF with valvular lesions. A fourth group (control) consisted of healthy, age-matched children. The various parameters used for establishing the presence of CMI were: the absolute lymphocyte count, skin tests with purified protein derivative (PPD), *Candida*, streptokinase-streptodornase (SK-SD), cardiac antigens, lymphocyte transformation tests, and incorporation of tritiated thymidine into deoxyribonucleic acid (DNA).

The absolute lymphocyte count was similar in all four groups. The skin-test reactions to PPD, SK-SD, and *Candida* were decreased significantly in patients with active disease; however, those children with inactive disease but with valvular lesions had the same degree of positive reactions as did the healthy control children. The in vitro lymphocyte response to phytohemagglutinin (PHA) was decreased in ARF patients; however, lymphocytes of those with inactive disease but with valvular lesions were hyperactive to the mitogen. This latter group also had increased cellular reactivity to SK-SD. Patients with active disease, however, had a more pronounced decrease in reactivity than did the controls. Children with rheumatic carditis gave delayed skin reactions and mitogen responses similar to those patients without any clinical evidence of rheumatic heart disease (RHD).

No significant blastic transformation of lymphocytes was noted in any of the study groups or in the controls but blastic response occurred upon exposure of lymphocytes to heart homogenates in 25% of patients with active rheumatic carditis, in 15% of those without carditis, and in 46% with inactive valvular lesions. Plasma from patients with active RF inhibited the in vitro response of normal lymphocytes to PHA.

The results of delayed skin responses and the in vitro lymphoblastic transformation in ARF patients makes it apparent that in addition to the already recognized alterations in humoral immunity there is an accompanying alteration in CMI. The findings in this study do not elucidate the exact relationship between the abnormal lymphocyte responses and the tissue lesions of carditis.

H. J. F.

Pharmacology, physiology, and pathology

Fatal anaphylaxis in systemic mastocytosis

Dodd NJ, Bond MG: J Clin Pathol **32**:31, 1979.

The authors describe the case history of a 42-yr-old woman with a fatal outcome as the result of systemic mastocytosis. Her symptoms consisted of flushing and pruritus and involved the face and limbs. For 2 yr she also noted

recurrent episodes of profuse, watery diarrhea. Her terminal illness consisted of a flu-like syndrome associated with vomiting and diarrhea and accompanied by flushing as well as pruritus of the skin over the entire body. Dyspnea and vascular collapse marked the sudden deterioration of her condition. Blood pressure was unobtainable upon admission to the hospital and she was anuric as the result of renal failure. The patient was also noted to be mildly icteric, and to have periorbital edema, purpura, and cutaneous ecchymoses. Rhonchi were audible in both lungs. There was a moderate degree of cervical and axillary lymphadenopathy as well as hepatosplenomegaly. The authors did not see any skin lesions typical of systemic mastocytosis. The peripheral blood smear revealed the presence of immature leukoerythroid cells, as well as circulating mast cells. Diagnostic work-up for carcinoid syndrome was negative. Radiologic study revealed diffuse osteosclerosis of the spine, pelvis, and long bones, rendering bone marrow aspiration and biopsy difficult. Microscopic examination of the aspirate revealed replacement of normal marrow hematopoietic elements by mast cell infiltrate. There was no peripheral blood, or marrow eosinophilia.

The patient died 5 days after hospital admission. Postmortem percutaneously obtained liver specimens revealed marked infiltration with mast cells of varying maturity. The infiltrated areas were associated with extensive fibroblast proliferation which, the authors claim, was due to the local release of large amounts of chemotactic factors from the mast cells.

In their discussion of the findings the authors stress the need for Giemsa or toluidene blue staining of tissue in order to properly identify tissue mast cells. It was further felt that the anaphylactic shock and bronchospasm were secondary to catastrophic histamine release (serum level, 31 ng/ml) without the protective effect afforded by tissue or peripheral blood eosinophils.

G. H. Jahng

Release of slow-reacting substance from anaphylactic lung tissue and its modification by β-sympathomimetics

Forsberg K, Sorenby L: J Allergy Appl Immunol **58**:430, 1979.

The authors studied the effect of isoprenaline (a nonselective β-agonist), terbutaline (a selective β_2-agonist), and ITP (tazolol, a selective β_1-agonist) on the release of slow-reacting substance of anaphylaxis (SRS-A) from chopped lung tissue obtained from Duncan-Hartley strain guinea pigs immunized with ovalbumin. Passive cutaneous anaphylaxis (PCA) was done in order to determine the type of antibody responsible for the anaphylactic reaction. SRS-A assay was performed using contraction of the longitudinal muscle of guinea pig ileum.

Histamine was the only mediator, other than SRS-A, present in significant amount in the ovalbumin-challenged lung supernate. The histamine effect could be blocked completely by treating the guinea pig ileum with brompheniramine, thereby assuring that the observed ileal smooth muscle contractions were SRS-A induced.

The PCA technique showed no activity when challenged 7 days after intradermal injection of the sensitizing serum. Isoprenaline inhibited the release of SRS-A from the sensitized guinea pig lung tissue at a dose of 10^{-8} to 10^{-6} M. Terbutaline inhibited SRS-A release at 10^{-6} to 10^{-5} M concentrations, but its effect was of less magnitude than that of isoprenaline. Tazolol did not inhibit SRS-A release at concentrations as high as 10^{-5} M.

Based on the PCA technique, the authors concluded that IgG_1 rather than IgE was responsible for the anaphylactic reaction observed. Isoprenaline was a greater inhibitor of SRS-A release from sensitized guinea pig lung tissue than was terbutaline. The selective β_1-agonist, tazolol, did not inhibit SRS-A release. The relative effectiveness of these compounds in inhibiting SRS-A release is similar to their previously reported relative effectiveness in inhibition of histamine release.

J. C. Phillipp

Serum IgE concentrations in rheumatoid arthritis: Lack of correlation with gold toxicity

Davis P, Hunder G, Sears M, Ropes M: Br Med J **2**:1477, 1979.

Certain of the side effects of chrysotherapy used for rheumatoid arthritis (RA) may be mediated by a type I hypersensitivity reaction. Although increased serum concentrations of IgE have been noted in RA and there is a wide variation in its concentration in normal populations, this study was made in order to determine the range of IgE levels in patients with RA. Further, the authors sought to determine if any changes in the level of IgE occurred with onset of gold toxicity and, if so, if these changes would be of value in predicting the onset of an allergic reaction to gold.

Thirty patients (23 female, seven male) with active RA but without either personal or family history of atopy were studied. None of the subjects received either gold or penicillamine treatment at the onset of the study. A group of 19 patients with ostearthritis (OA) served as control. Seventeen members of the experimental group received long-term intramuscular gold therapy. Serum IgE concentration in this group was significantly higher than that observed in the OA controls. IgE levels among RA patients with extra-articular complications such as Sjögren's syndrome were similar to those found in patients without complications. Exacerbations of the disease did not result in an increase in serum IgE levels. The other immunoglobulins were found to be increased along with IgE, an indication of the general immunologic hyperactivity that occurs in rheumatoid disease. Further, the development of toxic reactions to gold therapy was not accompanied by a significant rise in serum IgE levels and therefore was not predictive of impending adverse effect of chrysotherapy.

H. J. F.

Non-immununogenicity of a purified sodium hyaluronate preparation in man

Richter AW, Ryde EM, Zetterstrom EO: Int Arch Allergy Appl Immunol **59**:45, 1979.

Sodium hyaluronate (SH) has been employed as a substitute for the vitreous body of the eye as well as in the treatment of detached retinas. It has also been used for the replacement of synovial fluid. The SH used in these experiments is a purified extract of the rooster comb, a high-molecular weight heteropolysaccharide, found to be non-immunogenic in animals. In this study, its immunogenic properties in man were investigated.

Nine healthy young adult volunteers were prick tested with Coca's solution (negative control), SH 10 mg/ml, and histamine chloride 1:10,000 (positive control). The responses were read at varying intervals from 15 min to 24 hr before and after sensitization. Other evidences of sensitivity included microprecipitation tests with SH solution and complement analysis. None of the volunteers showed positive skin tests to SH, Coca's solution, or SH prior to or after sensitization with SH (which consisted of two subcutaneous injections of 1 ml SH, 10 mg/ml, 1 wk apart). After the sensitizing procedure the findings of the microprecipitation tests and complement analyses showed no significant changes from those found prior to the procedure. All subjects showed positive reactions to histamine before and after sensitization. These results prove the non-immunogenicity of highly purified SH for man.

E. H. W.

Combination bronchodilators: Antagonism of airway smooth muscle contractions in vitro

Hanna CJ, Roth SH: Agents Actions **9**:18, 1979.

These authors from Alberta, Canada, show that combinations of beta sympathetic agonists with methyl xanthine do not exert a synergistic effect in producing relaxation of constricted respiratory tract smooth muscle.

Spiral strips of guinea pig tracheobronchial musculature were prepared from hemisected upper airways (trachea and two main-stem bronchi). These were further subdivided into upper tracheal (UT), lower tracheal (LT), and bronchial (B) segments, and maintained in oxygenated Krebs' solution. The response of the strips from each airway segment to mediator challenge (acetylcholine, histamine, and 5-hydroxytryptamine) were predetermined with the aid of strain gauges and expressed as median effective dose (ED_{50}). Varying concentrations of ephedrine (E) or salbutamol (S), and theophylline (Th), respectively, were added to the muscle-strip preparations in order to inhibit the contractions caused by the ED_{50} of the various mediators. The authors determined the concentrations of E and Th necessary to produce 40% contraction inhibition in the smooth-muscle strips. A synergistic effect was considered to be one that caused over 80% inhibition of contraction in response to mediator challenge. Thus a theoretical additive value (Ta), or degree of contraction inhibition expected if the individual effect of E and Th were additive, was determined, and compared with the experimental values found for inhibition of mediator-induced smooth muscle contraction caused by varying concentrations of the two drugs. An additive effect resulted when the relaxation caused by the combination did not differ significantly from Ta ($p < 0.05$). Synergism was indicated when the values exceeded those of Ta. Thus combinations of either E-Th or S-Th were found to be only additive in their ability to inhibit mediator-induced constriction in the levels of tracheobronchial segments for all of the constriction-inhibitor drugs tested. It was observed further that the histamine-challenged B segments relaxed to a lesser degree when treated with constrictor antagonist drugs, either singly or in combination, than did comparable UT or LT segments. These authors' data differ from those of others doing similar work with combinations of bronchial dilator drugs. It is felt that the results of these experiments bring into question the role of these drugs in cyclic adenosine monophosphate (AMP)–induced smooth muscle relaxation.

D. S.

Activity of the alternative complement pathway after splenectomy: Comparison to activity in sickle cell disease and hypogammaglobulinemia

Corry JM, Polhill RB Jr, Edmonds SR, Johnston RB Jr: J Pediatr **95**:964, 1979.

Patients with sickle cell disease (SCD) and patients who have undergone splenectomy share a predisposition to severe pyogenic infection. This is due, in part, to the fact that some patients with SCD have deficient activity of the alternative complement pathway (ACP). The authors demonstrated this deficiency in some splenectomized patients. This argues, therefore, in favor of the importance of administering bacterial vaccines to patients in both of these categories.

In order to measure activity of the ACP, a new kinetic hemolytic assay was used to study serum from 58 splenectomized patients, aged 1.5 to 45 yr, from 62 patients with SCD, aged 1 to 43 yr, and from 18 patients with hypogammaglobulinemia, aged 6 to 55 yr. Eighty-eight normal individuals, aged 1 to 45 yr, served as controls.

In the kinetic hemolytic assay, rabbit erythrocytes were used as both "activator" and target of ACP activity. The rate at which hemolysis occurred was measured as the number of minutes required to lyse 50% of the cells. Sera was assayed at three dilutions for ACP activity and results obtained at the 1/12 dilution reported. Activity of the classical pathway was completely blocked in this assay system.

Thus, 6 (10%) of the 58 splenectomized patients had abnormal ACP activity, 10 (16%) of the 62 SCD patients also had abnormal activity, while 10 (56%) of the 18 hypogammaglobulinemic patients were abnormal, i.e., sera from patients with hypogammaglobulinemia were the most

abnormal. This latter group included individuals with both common variable and hereditary X-linked disease, all with deficiency of IgM, IgG, and IgA. Sera from all three groups with abnormal ACP activity had normal function of the classical complement pathway.

Addition of purified IgG to sera of patients with hypogammaglobulinemia improved ACP activity, suggesting that a deficiency of this immunoglobulin, which influences the rate of ACP activity, is responsible for abnormal ACP function in these patients. The defect responsible for abnormal ACP in SCD and splenectomized patients, however, remains unknown, although in some of the patients with SCD the C3 component of complement was abnormal. The authors suggest that the SCD patients may have a functional deficit of factor B, factor D, or properdin.

In conclusion, this study confirms previous reports of defective ACP activity in patients with SCD as well as in splenectomized and some hypogammaglobulinemic patients. This defect may contribute to the increased predisposition to bacterial infection in these three patient groups.

Andre Codispoti

Anti-allergic activities of a new benzopyranopyridine derivative Y-12,141 in rats

Goto K, Terasawa M, Maruyama Y: Int Arch Allergy Appl Immunol **59**:13, 1979.

The anti-allergic properties of a new benzopyranopyridine compound, Y-12,141, was studied in rats by measuring its effect on passive cutaneous anaphylaxis (PCA). The inhibitory effects produced by this new compound closely resemble those of disodium cromoglycate (DSCG). Anti-egg, IgE-like sera prepared in rats, and antisera against benzylpenicilloyl (BPO) prepared in mice were studied. The antisera in appropriate dilutions were injected intracutaneously into rats, and a latent period of 48 hr elapsed before challenge with the antigen. The test drugs dissolved in saline were administered immediately before challenge with antigen. The same test drugs were suspended in 0.5% methylcellulose and were administered orally 1 hr before challenge of other sensitized rats. The 48-hr PCA site and its control site in paired animals were excised 30 min after intravenous challenge. Skin samples taken from the PCA site were homogenized and the histamine content of the supernates determined fluorimetrically. Histamine release at the PCA sites in the rats was also studied. In other experiments the egg albumin antisera were injected into the peritoneal cavity of the rats and after a 4-hr latent period the animals were challenged intraperitoneally with egg albumin solution. The Y-12,141 was injected intraperitoneally 0.5 min before the challenge. After the animals were killed the peritoneal fluid was collected and examined for total and free histamine content. Y-12,141 administered intravenously at various intervals up to 30 min prior to intravenous challenge had a fivefold greater inhibitory effect on the PCA than did DSCG. Oral administration of Y-12,141 in a dose of 5 mg/kg had the most potent inhibitory effect when administered up to 120 min before antigen challenge. Y-12,141 and DSCG administered (respectively) intravenously prior to antigen inhibited the PCA in a dose-dependent manner. The inhibitory dose of Y-12,141 required was considerably less than that of DSCG. The results obtained with the BPO antigen were essentially similar to those seen with egg albumin. The PCA site contained considerably less histamine when compared with the non-PCA site. Both Y-12,141 and DSCG showed significant inhibition of histamine release in passive peritoneal anaphylaxis in rats, but both failed to inhibit the spontaneous release of histamine caused by saline injection. The authors conclude that both Y-12,141 and DSCG inhibit PCA in rats. However, when administered orally, Y-12,141 is more effective than DSCG.

E. H. W.

Eosinophilic occlusive pulmonic panarteritis associated with long-term antibiotic therapy

Majeski JA, Fitts CT: Surg **85**:377, 1979.

The authors had observed that various antibodies in large bolus doses administered to infected calves by cannula into the external jugular vein over long periods of time produced eosinophilia and occlusive pulmonary arteritis. In the present study they used 29 normal female calves between 180 and 225 kg. Penicillin, streptomycin, or sodium cephalosporin, respectively, were administered via the external jugular vein. Histologic studies showed that the ensuing pathologic anomalies were limited to the pulmonary artery and consisted of (1) hypertrophy of the intima and media, and (2) disruption of the internal elastic membrane and fragmentation of the reticulum accompanied by massive eosinophilic infiltration into the adventitia and vascular endothelium. These eosinophils produced occlusion of the pulmonary artery. The anomalies appeared only if penicillin or streptomycin was administered for 45 to 60 days in doses equal to or greater than 1,000,000 U penicillin or 1 gm streptomycin daily, respectively. Similar lesions were found in one calf which received sodium cephalothin 12 gm/day for 20 days. Pulmonary vascular lesions were not found (1) in calves receiving either penicillin or streptomycin in lesser doses, regardless of the length of time of administration, or (2) in controls. Blood eosinophilia correlated very closely with the occurrence of pulmonic lesions. The etiology of these lesions was discussed.

E. H. W.