● **942** ABSENCE OF A MONOCLONAL ANTIBODY-DEFINED LEUKOCYTE PROTEIN IN PATIENTS WITH ABNORMAL LEUKOCYTE FUNCTION. Patrick G. Beatty, Hans D. Ochs, Robert D. Schreiber, John M. Harlan, Thomas H. Price, Henry Rosen, John A. Hansen, Seymour J. Klebanoff. University of Washington, Departments of Medicine and Pediatrics, Seattle; and the Research Institute of Scripps Clinic, La Jolla, California

Two 9 year old unrelated children with recurrent bacterial infections were described previously to have a defect in polymorphonuclear leukocyte (PMN) adherence and chemotaxis, and absence of a cell associated glycoprotein (J Pediatr 101:932, 1982). A murine monoclonal antibody (Mab) designated 60.3 which recognizes a multimeric cell surface protein complex with polypeptide chains of 95, 130 and 150 kd on normal PMN, monocytes and lymphocytes did not react with the patients' cells. The addition of Mab 60.3 to normal cells produced functional defects comparable to those of our patients. In both instances lymphocytes showed depressed in vitro proliferative responses to mitogens and allogeneic cells and decreased natural killer cell activity. PMN function studies revealed loss of ability to adhere to endothelial cells in the presence of phorbol myristate acetate and depressed chemotaxis, phagocytosis and zymosan induced iodination. To further characterize the missing protein complex, we determined its relationship to cell-surface complement receptors. Both patients lacked type 3 complement receptors reactive with C3bi (CR3) but had intact C3b receptors (CR1). Similarly, incubation of normal PMN with Mab 60.3 selectively inhibited CR3-mediated rosettes. These studies indicate that the missing membrane-associated proteins recognized by Mab 60.3, among which is one with CR3 receptor activity, plays a significant role in PMN and lymphocyte function and that its absence is directly responsible for the clinical symptoms of our patients.

† **943** INHIBITION OF ^{125}I-C3 UPTAKE AND HEMOLYTIC COMPLEMENT ACTIVITY BY IV IgG. Melvin Berger, Carmen Y. Brown and Pnina Rosenkranz (Spon. by T. A. Fleisher). Allergy-Immunology Service, Walter Reed Army Medical Center, Washington, D.C.

Recent studies suggest that IgG is a particularly good acceptor for nascent C3b. We used therapeutic immune serum globulin (ISG) preparations to determine if excess IgG would compete for deposition of C3b onto activators such as antibody sensitized sheep erythrocytes (EA) and decrease hemolytic activity. Both im and iv forms of ISG inhibited uptake of ^{125}I-C3 onto EA with C6 or C8 deficient sera as sources of early complement components. ^{125}I-C3 uptake was inhibited 50% at 10-20 mg/ml of im ISG and 20-30 mg/ml of iv ISG (Cutter). Similar concentrations of ISG also inhibited ^{125}I-C3 uptake onto preformed EAC $\overline{14}$ with the deficient sera or with purified C2. IV and im ISG inhibited hemolytic activity of whole serum with EA and of purified C3 with EAC $\overline{14}$ and purified components, but the concentrations necessary for 50% inhibition of the hemolytic assays were much lower. These effects of IgG were specific since addition of human serum albumin at equivalent concentrations did not inhibit any of the assays. Using ISG fractionated by gel filtration, we verified that the inhibition of hemolytic activity was due to monomeric IgG rather than aggregates. These results suggest that inhibition of C3 uptake onto particles can occur at the elevated serum IgG levels achieved during high dose IVIG therapy. Diminished uptake of C3 onto sensizitzed platelets could contribute to the efficacy of high dose IVIG in ITP.

944 B CELL ABNORMALITIES IN CHILDREN WITH AIDS. Larry J. Bernstein, Brian Novick and Arye Rubinstein, Albert Einstein College of Medicine, Department of Pediatrics, Microbiology and Immunology, Bronx, New York.

B cell abnormalities have recently been described in adults with the Acquired Immunodeficiency Syndrome. Immunological profiles were performed in 19 children with AIDS or its prodromal stage. Opportunistic infections in AIDS patients included disseminated cytomegalovirus, invasive candidiasis, pneumocystis carinii, pneumonia and systemic mycobacterium avium intracellulare. Hypergammaglobulinemia was documented in 6 of 7 children with AIDS and in all prodromes specific antibody responses to tetanus immunization were extremely low or undetectable in 5 of 6 prodromes and in 4 of 5 children with opportunistic infections. Mitogenic responses to phytohemagglutinin were normal in 6 of 7 AIDS infants and 11 of 12 prodromes. Pokeweed mitogen responses were depressed or absent in all patients with prodrome and in 6 of 7 with AIDS. The combination of hypergammaglobulinemia, poor specific antibody responses and depressed pokeweed mitogen responses suggest that B cell abnormalities are found in childhood AIDS, and are similar to those found in adults with the syndrome.

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945 HUMAN T-CELL HYBRIDOMA FORMATION FOR POTENTIAL PRODUCTION OF TRANSFER FACTOR. W.Borkowsky, R.Pilson & H.S. Lawrence. NYU Medical Center, Dept.s of Pediatrics & Medicine, New York, N.Y.

Peripheral blood mononuclear cells from individuals with exquisite cell-mediated immunity (CMI) to the recall antigens PPD, Diphtheria Toxoid (DT), Tetanus Toxoid (TT), or Candida (CAN) were stimulated with that antigen for 5-7 days and then subsequently fused to either of 2 HAT sensitive human T-cell Leukemia cell lines (BUC or F-353)* These cell lines demonstrate a helper T-cell phenotype but are OKT3 negative. T-cell hybridomas were selected for in HAT containing media. Resultant clones were subcloned by limiting dilution. Transfer Factor (TF) was prepared from individual clones and tested for in vitro inducer of CMI activity and suppressor of CMI activity in a Leukocyte Migration Inhibition (LMI) assay. TF from an (OKT3$^-$) clone derived from a PPD positive individual exhibited inducer activity specific for PPD but not for TT. TF prepared from the parent BUC line showed no inducer activity. Another clone derived from a fusion of a DT immune donor and the BUC line was shown to possess DT inducer activity in the LMI assay. This clone demonstrated the OKT3 marker on 12-18% of its cells. TF production by both DT and PPD hybrids was short-lived. Several hybrids were derived from a TT immune individual. Four clones derived from these hybrids acquired OKT3 markers. TF from two of these demonstrated TT inducer activty. This activity was lost following immunoabsorption of the TF on TT, a finding consistent with the ability of human TF to bind to specific antigen.

*a generous gift of J. Stobo.

946 CELL-MEDIATED PLATELET RECOGNITION BY LEUKOCYTES FROM INDIVIDUALS WITH AUTOIMMUNE THROMBOCYTOPENIA AND ITS SUPPRESSION BY HUMAN AND ANIMAL TRANSFER FACTOR. W.Borkowsky & S.Karpatkin. NYU Medical Center, Depts. of Pediatrics and Medicine, New York, N.Y.

Adults with autoimmune thrombocytopenia purpura (ATP) exhibit Leukocyte Migration Inhibition (LMI) when their buffy coat cells are incubated with either homologous intact platelets or their solubilized membranes, whereas leukocytes from normal individuals do not. Since Transfer Factor (TF) has been recently shown to exhibit antigen specific inhibition of cell-mediated immunity (CMI), as well as an antigen-specific induction of CMI, we tested TF in vitro in LMI assays involving leukocytes from individuals with ATP undergoing platelet stimulation. TF derived from former ATP patients in remission suppressed recognition of platelets by ATP leukocytes, whereas TF from normals or ATP patients not in remission did not. Since TF is not species restricted in activity we tested TF prepared from peripheral blood obtained from a rabbit and a calf immunized with human platelets. Rabbit TF treatment of immune cells resulted in a 16% increase in the Migration Index in the LMI assay, representing a significant abrogation of platelet recognition. Calf TF suppressor activity was not present in material obtained from preimmunization leukocytes. It appeared 1-2 months after immunization and persisted until the calf was reimmunized on day 110, whereupon suppressor activity was lost for a month and reappeared 1-2 months later.

● **947** CELLULAR INTERACTIONS IN THE LYSIS OF VZV INFECTED FIBROBLASTS. Raleigh A. Bowden, Myron J. Levin and Anthony R. Hayward. University of Colorado School of Medicine, Dept. of Pediatrics, Denver 80262.

Human blood mononuclear cells (MNC) lysed varicella zoster virus (VZV) infected targets in an 18 hour ^{51}Cr release assay at effector:target (E:T) ratios of 50:1 to 10:1. Mean specific lysis at 50:1 E:T was 45% when effectors were autologous with targets; 35% when 2 or 3 HLA A or B antigens were shared and 18% when no HLA antiens were shared between E and T. Addition of antibody to HLA inhibited lysis by 65%. Inhibition of lysis following panning to deplete subsets selectively was: 52% for OKT 8; 44% for OKT 4; 30% for HNK 1 and OKM 1. Inhibition by OKT 4 was entirely, and by OKT 8 partly, reversed by addition of a PHA induced T cell supernatant (SUP). Density gradient seperated NK cells lysed targets in the presence of SUP. In combined depletion experiments the inhibition of lysis by anti-HLA summated with inhibition by HNK 1. The inhibition studies suggest the existence of at least two pathways for VZV-fibroblast lysis: one HLA restricted and presumably mediated by cytotoxic T lymphocytes and another dependent on lymphokine and mediated by NK cells. Studies in patients receiving leukemia remission maintenance treatment indicate that both pathways may be severely inhibited by chemotherapy.