●955 REVERSE TRANSCRIPTASE (RT) ACTIVITY AND RETROVIRAL SEROLOGY IN KAWASAKI DISEASE (KD). Anne H. Rowley, Bernard J. Poiesz, John L. Sullivan, and Stanford T. Shulman. Northwestern U. Med. Sch., Children's Memorial Hospital, Dept. of Ped., Chgo., IL, SUNY Health Sciences Ctr., Dept. of Med., Syracuse, NY, and U. Massachusetts, Dept. of Ped., Worcester, MA.

We have recently published evidence that a retrovirus may be etiologically related to KD (Lancet, Sept. 6, 1986). We have performed co-cultivation of acute KD patient peripheral blood mononuclear cells (PMBC's) with the human lymphoblastoid cell lines MOLT-3, MOLT-4, NC-37, and HUT-78 in RPMI 1640 media containing PHA, IL-2 and in some cases, polybrene, anti-α interferon, and PHA-stimulated normal adult or cord blood PBMC's. Culture supernatants were assayed weekly for Mg^{++}-dependent RT activity: aliquots were centrifuged, and the pellet resuspended in tris-HCl with KCl, DTT, $MgCl_2$, Triton X-100, poly(rA) oligo(dT) and ^{3}H-TTP. After incubation, duplicate aliquots were spotted onto glass fiber filters, washed, dried, and counted. RT activity was detected in 16/341 KD co-cultivation flask supernatants but in only 2/278 flasks containing control lymphocytes ($p<0.01$). None of 4 convalescent KD sera had antibody to gp120 or gp41, envelope glycoproteins of HTV (HTLV-III), by immunoblot analysis. None of 8 convalescent KD sera had IgG antibody to HTLV-I, and none of 7 had IgM antibody to HTLV-I or IgG antibody to HTLV-II by ELISA's utilizing purified whole disrupted virus. The finding of RT activity in co-cultured supernatants supports the possibility of a retroviral etiology for KD, but serologic studies thus far do not show cross-reactive antibodies to HTLV-I, HTLV-II, or HIV in patients with KD.

956 SERUM INTERFERON (IFN) LEVELS IN PATIENTS WITH ACUTE KAWASAKI DISEASE (KD) Anne H. Rowley, Olivia T. Preble, and Stanford T. Shulman. Northwestern U. Med. Sch., Children's Memorial Hospital, Dept. of Ped., Chgo., IL., and the Uniformed Services U. of the Health Sciences, Dept. of Path., Bethesda, MD.

We have recently published evidence that a retrovirus may be etiologically related to KD (Lancet, Sept. 6, 1986). IFN can be detected in serum of patients with active viral infection or autoimmune disease, and is elevated in patients with acquired immunodeficiency syndrome, a known retroviral-induced illness. We tested sera from 20 patients with acute KD (median age 29.5 months) and 7 control children with nonviral illness (median age 24 months) for IFN using a semi-micromethod on human fibroblasts (GM2504) trisomic for chromosome 21, which carries the gene(s) for sensitivity to human IFN. About $2x10^4$ cells were incubated with twofold serial dilutions of serum in 96-well microtiter plates for 18 hours at 37°C, and then challenged with encephalomyocarditis virus (0.1 pfu per cell). Virus-induced cytopathic effect was evaluated 24-30 hours after infection. The IFN titer was defined as the reciprocal of the highest dilution of sample to protect 50% of the cells. Reference α, β, and γ IFN were included in each assay, and results standardized with reference human α IFN # 023-901-527 (NIH). By this method, 18/20 acute KD sera but only 2/7 controls had IFN levels >4 IU/ml ($p<0.005$ by one-tailed Fisher's exact test). Characterization of the type(s) of IFN is currently in progress, but preliminary results indicate α and/or γ IFN in KD sera. These findings support a viral etiology for KD. The role IFN may play in the pathogenesis of KD warrants further study.

957 AN ABSOLUTE POLYMORPHONUCLEAR LEUKOCYTE CONCENTRATION OF > 15,000/MM^3 IS HIGHLY PREDICTIVE OF OCCULT BACTEREMIA IN FEBRILE CHILDREN. Lorry G. Rubin, Lillian Carmody (Spon. by Philip Lipsitz). SUNY at Stony Brook, and Schneider Children's Hosp. of Long Island Jewish Med. Ctr., Dept. Peds., New Hyde Park, NY.

We prospectively evaluated 545 febrile children (age 3-24mo, T ≥102° F) at risk for occult bacteremia using blood culture, CBC and differential, and CRP. Patients with malignancy, sickle hemoglobinopathy, epiglottitis, septic shock or meningitis were excluded. Bacteremia was detected in 20 (S. pneumoniae 13, H. influenzae 5, S. aureus 1, N. meningitidis 1). The sensitivity (sens), specificity (sp) and positive predictive values (PPV) of tests for identifying bacteremic children are shown in the table. An absolute PMN of >15,000/mm^3 had the highest PPV (23%). It was found in only 5.5% (30) of all patients but identified 43% of bacteremic patients. Furthermore, when a larger age range (1-39 mo, n=573) was considered, the PPV of abs PMN >15,000 was 29%. Thus, highly febrile young children with an absolute PMN >15,000 are at extremely high risk to have bacteremia; therefore, presumptive antibiotic therapy is warranted in this subgroup of highly febrile young children pending results of blood culture.

Criteria	Sens	Sp	PPV	Criteria	Sens	Sp	PPV
WBC > 15K	85	70	10	abs PMN > 20K	5	98	9
WBC > 20K	50	88	14	abs band > .5K	70	60	7
WBC > 25K	20	95	13	abs band > 1K	40	77	7
WBC > 20K	10	97	13	abs band > 1.5K	25	86	7
abs PMN > 10K	75	82	14	CRP > 2mg/dl	67	68	2
abs PMN > 15K	35	95	23	CRP > 3mg/dl	22	78	2

958 IMMUNIZATION OF PEDIATRIC ONCOLOGY PATIENTS WITH HAEMOPHILUS INFLUENZAE TYPE B (HIB) POLYSACCHARIDE VACCINE. Lorry G. Rubin, Jane Moore, Nancy Anderson, & Gungor Karayalcin (Spon by P. Lanzkowsky). SUNY at Stony Brook & Schneider Children's Hosp. of Long Island Jewish Med. Ctr., Dept. Peds., New Hyde Park, NY.

Although at increased risk for Hib infection, there are limited data concerning safety and immunogenicity of Hib polysaccharide vaccine in children with malignancies. 43 children with malignancies (19 with acute lymphoblastic leukemia, ALL, age 3-20y; 15 with Hodgkins Disease, HD, s/p splenectomy, age 16-22y; 9 with other malignancies, age 2-19y) received 25mg vaccine SQ (b CAPSA-I, Praxis Biologics). At time of vaccination, patients were not receiving induction chemotherapy and were not neutropenic. The vaccine was extremely well tolerated with no side effects in any of 43 children. Prevaccination anti-PRP antibody (by RIA) was < 0.15 mcg/ml in 8 of 19 with ALL (geo mean 0.25mcg/ml), 2 of 15 with HD (geo mean 0.70) and 2 of 10 with other malignancy (geo mean 0.58). Inadequate response (1mo postvaccination Ab level of < 1mcg/ml) was found in 10 of 18 with ALL (geo mean 1.1mcg/ml, 4 of 19 had < 0.15mcg/ml), 5 of 11 with HD (geo mean 2.1) and 3 of 8 with other malignancies (geo mean 1.71). There was no significant correlation between postvaccination Ab level and age, sex, serum IgG, IgM IgA, absolute lymphocyte or granulocyte count for any of the groups. There was a positive correlation between log pre-and log postvaccination Ab level for all 3 groups ($p < .05$). For ALL patients, there was a significant negative correlation between no. months of chemotherapy and log post-immunization Ab ($p < .01$). Thus, immunization with Hib polysaccharide vaccine cannot be relied upon to protect these patients from Hib disease.

†959 IMMUNIZATION OF CHILDREN WITH SICKLE CELL DISEASE (SC D) WITH HAEMOPHILUS INFLUENZAE B (HIB) VACCINE. Lorry G. Rubin, Debra Voulalas, Lillian Carmody, Gungor Karayalcin (Spon. by P. Lanzkowsky). SUNY at Stony Brook & Schneider Children's Hosp. of Long Island Jewish Med. Ctr., Dept. Peds., New Hyde Park, NY.

There are no data concerning safety and immunogenicity of Hib polysaccharide vaccine in children with SCD. 89 patients with SCD (SS:60, SC:24, SThal:5) age 18mo to 20y were given 25mg vaccine SQ (b CAPSA-I, Praxis Biologics). The vaccine was well tolerated; mild side effects were observed in 4/89 (4.5%). In addition, 2 patients with previous vaso-occlusive crises were hospitalized with crisis within 72h of vaccination. Prevaccination anti-PRP antibody (by RIA) was < 0.15mcg/ml in 3 of 6 age 18-24mo (geo mean 0.16mcg/ml), 8 of 22 (36%) age 2-5y (geo mean 0.46), and 3 of 46 age 6-20y (geo mean 1.03). Inadequate response (1-2mo postvaccination Ab level of < 1mcg/ml) was found in 2 of 3 age 18-24mo (geo mean 0.55), 7 of 18 (39%) age 2-5y (geo mean 2.2) and 2 of 42 age 6-20y (geo mean 15.4). 6mo postvaccination, > 1mcg/ml Ab was present in the 2 hyporesponders age 6-20y, but not in 4 hyporesponders age 2-5y. In the 2-5y group, there was no significant correlation of log postvaccination Ab level with age, sex, disease type, disease severity, log prevaccination Ab level, history of transfusion, serum IgG, IgM, or IgA. In the 2-20y group, there was no significant difference between geo mean postvaccination Ab of patients with or without Howell-Jolly bodies on blood smear. In contrast to the good response of SCD pts age > 5y and of normal children age 2-5y, Hib polysaccharide vaccine is not reliably immunogenic in children < 6y of age with SCD and cannot be relied upon for protection of this age group from Hib disease.

†960 MOLECULAR ANALYSIS OF ACYCLOVIR-RESISTANT VARICELLA-ZOSTER VIRUS ISOLATES. Mark H. Sawyer, Jeffrey M. Ostrove, David J. Waters, Karen K. Biron, Stephen E. Straus (Spon. by M. M. Frank). Laboratory of Clinical Investigation, NIAID, Bethesda, MD; Massachusetts Dept. Public Health, Boston, MA; Burroughs Wellcome Co., Research Triangle Park, NC.

Many serious varicella-zoster virus (VZV) infections are treated with acyclovir (ACV). While there has not been clinical evidence of VZV resistance to ACV, its possibility warrants our understanding of its molecular basis. The majority of laboratory derived resistant VZV strains are deficient in thymidine kinase (TK) which phosphorylates ACV. We studied the TK locus of 3 wild-type (TK^+) and 3 ACV-resistant (TK^-) strains. The 2.6 Kb Pst I-P VZV DNA fragment encoding TK was cloned from each strain and sequenced by the dideoxy chain termination method. The TK open reading frame is highly conserved with >99% nucleotide homology among all strains. All TK^+ strains are identical in predicted amino acid sequence in and around the putative enzyme binding sites for ATP and thymidine. However, one TK^- mutant has a single base change near the thymidine binding site. The two other mutants contain premature stop codons which presumably result in a truncated, nonfunctional polypeptide. We propose that one mechanism of ACV resistance in VZV involves single base substitutions that lead to alterations in the substrate binding sites or overall secondary structure of the viral TK.