**1015** LEUKOCYTE INHIBITION FACTOR (LIF) RELEASE BY SPECIFIC ANTIGEN STIMULATION OF CORD LYMPHOCYTES (CL). Henry F. Pabst, Joan Crawford, Mary Grant. Univ. of Alberta Department of Pediatrics, Edmonton, Alberta, Canada.

The transfer of specific cell-mediated immunity (CMI) from mother to fetus during pregnancy has considerable potential significance in immunization schemes. We reported previously on blast transformation (BT) in response to specific antigen of CL from infants whose mothers' cells exhibit BT to the same antigens. Karyotypic analyses of the transformed cells support the conclusion that they are the infant's and not the mother's (Ped. Res. 18: 262A, 1984).

We have now demonstrated LIF generation in 24 and 48 hr cultures of CL, stimulated by purified protein derivative (PPD) or phytohemagglutinin (PHA). Indicator leukocytes from normal donors placed in wells in 2% agarose were incubated x 48 hrs in media containing LIF (LM), and controls in media without LIF or with PPD or PHA. Migration was measured by calculating the area covered by IL. Inhibition of migration (MI) is percent decrease in migration by the indicator leukocytes in LM compared to controls. CL from 17 successive babies produced LIF in presence of PHA, giving >60% MI; 5 of these also produced LIF in presence of PPD, giving >50% MI. These 5 had stimulation indices to PPD by BT of >2.0; the others did not. We conclude that the specific CMI transferred during pregnancy from the mother to the fetus in addition to response by BT to specific antigen extends to the capacity of lymphokine production. This passive CMI may account for poor immunization results with vaccines requiring a naive T-cell population reactive to certain specific antigens, eg. BCG.

**●1016** SPECTRUM OF HTLV-III INFECTION IN CHILDREN. S. Pahwa, S. Fikrig, M. Kaplan, M. Popovic, A. Sarngaharan, R. Gallo, R. Pahwa. Cornell Univ Med College, North Shore Univ Hosp, Manhasset, NY, Downstate Med Ctr, Brooklyn, NY, National Cancer Institute, Bethesda, MD.

Clinical and laboratory findings were evaluated in 17 patients (pt), aged 6mo-6yrs who were positive for serum antibody to the p 41 antigen of the HTLV-III virus by Western blot analysis. All but 1 pt were in risk groups for AIDS. 7 pt had opportunistic infections(OI) and fit the diagnostic criteria established by the CDC for pediatric(P) AIDS. 8 pt without OI designated as P AIDS related complex(ARC) had 1 to >3 clinical features associated with P AIDS. The remaining 2 pt were asymptomatic. HTLV-III virus was isolated from lymphocytes of 5/6 pt,(1 with P AIDS & 4 with P ARC). Immune abnormalities were detected in 16/17 pt and characteristically consisted of hypergammaglobulinemia, decreased B-cell differentiation in-vitro in response to T-dependent & T-independent stimuli, and depletion of T4 subset of lymphocytes. Proliferative responses to mitogens & antigens were variable. 10/10 mothers tested were seropositive for HTLV-III; 1 had clinical AIDS, 3 had lymphadenopathy and the remaining were asymptomatic. 5/5 mothers tested had immune abnormalities in-vitro. 5 clinically well siblings of 3 P ARC pt were seronegative & did not manifest immune abnormalities. 2/4 fathers were seropositive with clinical & immunologic abnormalities. These findings indicate that seropositivity for HTLV-III is frequently associated with immune abnormalities with or without clinical manifestations and that recovery of HTLV-III virus is high in infected children.

**1017** INFLUENCE OF LABOR ON CORD BLOOD LYMPHOCYTE(lym) POPULATIONS. W.Pittard, K.Miller, R.Sorensen. CWRU, Dept. Pediatrics, RB&C Hosp., Cleve, OH

We have previously demonstrated that cord blood lym proliferative responses(J Clin Immuno/Immunopath,30,1984) and levels of pokeweed induced antibody secreting cells(Pediatr Res, in press) are greater among neonates delivered by Cesarean section(CS) than among those delivered vaginally. These increases were noted to be related to the absence of labor prior to CS. To determine if the presence of labor prior to delivery influenced the numbers and/or proportions of cord blood(CB) T-lym populations, these cells were identified in 46 term neonates(17 delivered vaginally, 29 CS). Mononuclear cells were isolated on a ficoll-hypaque gradient. T-lym were identified with the monoclonal antibodies $OKT_3$(all T-lym), $OKT_4$(helper-inducer lymphocytes) and $OKT_8$(suppressor/cytotoxic T cells) using flow cytometry after indirect immunofluorescent labeling.

| | Vaginal Del. | Cesarean Del. | |
|---|---|---|---|
| | | Labor | No Labor |
| n | 17 | 9 | 20 |
| absolute lymphocyte count/$mm^3$ | 4152±1103 | 4394±1237 | 4645±1575 |
| $OKT_8$ % positive | 21± 5* | 22± 4* | 16± 4* |
| $OKT_4$ % positive | 47± 10 | 44± 7 | 44± 11 |
| $OKT_3$ % positive | 66± 9 | 63± 9 | 58± 11 |

*p values: labor vs no labor <.002, vaginal vs no labor <.0013

These data suggest that labor influences the proportions of CB T-lym subsets without changing the total number of lym. Changes in T-lym subpopulations could explain differences in T and B lym responses in newborns delivered by CS.

**●1018** ALLOGENEIC SEMINAL LEUKOCYTES AND GERM CELLS AS COFACTORS IN AIDS: EVIDENCE FROM A MURINE MODEL. Rukmani Raghunathan, Thomas M. Mundy, Nora C.J. Sun, Judy Faust, Sabita Misra (Sponsored by Douglas C. Heiner). UCLA School of Medicine, Harbor-UCLA Medical Center, Departments of Pediatrics and Pathology, Torrance, CA.

Recent evidence incriminates a group of retroviruses as causative agents for AIDS but discrepancy between antibody prevalence and disease incidence in high risk populations indicates a role for other factors in development of the syndrome. Epidemiological associations between AIDS or related immune aberrations and numbers of sexual partners and rectal receptive intercourse suggest such a role for allogeneic leukocytes (AL) and germ cells (GC) of semen by perhaps inducing an initial immunodeficiency (ID). This hypothesis was tested in a murine model.

AKR (H-2k) and C57BL/6 (H-2b) mice were given leukocytes (4.8 x $10^7$ or GC ($3x10^7$) of syngeneic or allogeneic origin or a combination of AL and GC over 3 wks. ID (depression of Con A and alloreactivity and of natural killer activity ($p<0.001$) detectable at 8 wks and progressive at 12 wks developed only in mice given the combination. Histopathological abnormalities in ID mice included absence of thymic Hassall's corpuscles in both strains and histiocytic hyperplasia of lymphoid organs and a B cell leukemia (unlike the common T lymphoma) in the AKR strain.

ID was induced in normal adult mice by administration of AL and GC in numbers comparable to those encountered through rectal intercourse by homosexual males. Chronic immune stimulation by alloantigens may alter host immune response to the retroviral agent leading to the development of AIDS.

**† 1019** AUTOIMMUNITY TO ARTICULAR ANTIGENS IN JUVENILE ARTHRITIS. CG Ragsdale, FC Garbrecht, RE Petty, DB Sullivan. U of Michigan and U of British Columbia. (Sponsored by George R. DeMuth).

We studied 103 JA children, 46 controls and 25 patients with osteoarticular syndromes (OAS) to determine if differences in immune reactivity characterized different onsets or outcomes.

We measured cell-mediated immunity (CMI) to human collagen, proteoglycan monomer (PM) and link protein (LP). Production of leukocyte inhibitory factor by mononuclear leukocytes was assayed and correlated with HLA type. Antibodies to native type II collagen were measured in an enzyme-linked immunosorbent assay. Results were analyzed using Fisher's Exact Test.

JA patients were less reactive to ConA than controls, yet were more reactive to collagen I, II and PM. JA patients did not differ from OAS patients. CMI did not correlate with onset, course, outcome, ANA, RF or HLA type.

| Stimulus | ConA | Coll I | Coll II | Coll III | PM | Link |
|---|---|---|---|---|---|---|
| Cont(#Pos/n) | 33/45 | 3/34 | 8/46 | 3/31 | 2/46 | 0/39 |
| JA | 51/97 | 21/59 $^{++}$ | 51/99 $^{+++}$ | 14/62 | 23/100 $^{+}$ | 2/39 |
| OAS | 13/24 | 4/18 | 18/25 $^{+++}$ | 3/15 | 5/24 | 0/11 |

Different from control, Pc<$^{+}$0.05, $^{++}$0.01, $^{+++}$0.001

Collagen antibodies were found in 23/86 JA, 1/20 OAS, and 0/31 controls ($p<0.01$). These antibodies, confirmed by absorption studies, distinguished erosive disease from other JA ($p<0.001$).

CMI to articular antigens may be of pathogenetic importance in JA, but in vitro reactivity does not predict risks or complications. The presence of antibodies to native type II collagen may be of greater importance in signaling poor outcome in JA.

**1020** IMMUNOGLOBULIN E LEVEL IN PRETERM BIRTHS Kanamarlapudi Rao, Geetha Cattamanchi, Maria Braum, Marija Ristich, Narasingrao Pampati. Spon. by Ronald Poland. Pontiac General Hospital, Division of Neonatology Department of Pediatrics, Pontiac, Michigan.

This study is to determine the level of IG E in cord serum and correlate with birthweight and gestational age. Cord serum was collected from 66 preterm newborns varying from 26 weeks to 36 weeks AGA. Mean gestational age 32.5 ± 2.78 weeks mean weight 1868 gms ± 542 gms. Sera were separated stored at -20°C until estimation was done. Immunoglobulin E was measured by quantitope $^{125}$I - IG E radioimmunoassay and all values are expressed in IU/Ml. The samples were analyzed in duplicate. The interassay variation was less than 10% and intraassay was less than 5%. As the IG E distribution in cord serum was assymetric the logarithmic value was used for simple linear regression analysis. Immunoglobulin E mean concentration 0.795 IU/Ml median 0.125 and the range 0 to 10.0 IU/Ml SD ± 1.81. Correlation coefficients for the log of IG E concentration vs gestational age ($r = .003$) and vs birthweight ($r = 0.119$) were not significant.