812 LOSS OF NATURALLY ACQUIRED HEPATITIS B SURFACE ANTIBODY (ANTI-HBs) IN TWO HEMOPHILIACS WITH AIDS RELATED COMPLEX. Gordon L. Bray, Gregory Reaman (Spon. by S.L. Leikin). Div. Hematology/Oncology, Child. Hosp. Nat'l. Med. Ctr., Washington, D.C.

Children with acquired immunodeficiency syndrome (AIDS) or AIDS related complex (ARC) may develop defective humoral immunity as evidenced by suboptimal antibody responses to a variety of immunogens. We recently identified two hemophiliacs who acquired anti-HBs from exposure to HBsAg in factor VIII concentrate, but later became anti-HBs seronegative following infection with Human immunodeficiency virus (Hiv). Neither patient demonstrated evidence of clinical hepatitis coincident with seroconversion to anti-HBs positivity. Both have exhibited generalized lymphadenopathy for greater than one year although neither have had opportunistic infections. Patient #1 seroconverted to anti-HBs positive status in 4/83, demonstrated anti-HBs in serum on 4 subsequent occasions between 4/83 and 8/85, but reverted to seronegative status on testing in 9/86 and 11/86. Seropositivity for anti-Hiv by the ELISA method was noted in 8/85; hypergammaglobulinemia (hyper IgG) was noted in 8/85 and 11/86 (1840-2130 mg%). Patient #2 seroconverted to anti-HBs positivity in 6/81, demonstrated anti-HBs in serum on 5 subsequent occasions until 1/85, but reverted to seronegative status in 7/85. He has remained anti-HBs seronegative to date. Seropositivity for anti-Hiv (ELISA method) was first documented in 7/85 and reversed T4/T8 ratio was noted in 1/83 and 11/86. Hyper IgG was detected in 6/85 and 11/86 (1930-2300 mg%). These preliminary data suggest that Hiv infected hemophiliacs may lose their capacity to maintain adequate titers of anti-HBs, thereby compromising their humoral immunity to hepatitis B.

●813 THE PRESENCE OF IgA-RHEUMATOID FACTOR IN ACTIVE JUVENILE RHEUMATOID ARTHRITIS. Riva Brik, Sharyn M. Walker, Deborah K. McCurdy. University of Southern California, Childrens Hosptial of Los Angeles, Departments of Pediatrics and Microbiology, Los Angeles California. (Sponsored by Robertson Parkman)

Rheumatoid factor (RF), particularly IgM RF, may play an important role in the pathogenesis of rheumatoid arthritis. IgG and IgA have been reported. In children with juvenile rheumatoid arthritis (JRA), IgM RF is not routinely found. The incidence of IgA RF is not known. This study was designed to determine the incidence of IgA RF in children with JRA and correlate its presence with disease activity and outcome. An ELISA assay using rabbit IgG antigen was used to detect IgA RF in the sera of 61 children with JRA. The overall incidence of IgA RF seropositivity was 47%. The incidence was 84% in patients with inactive disease, as manifested by warm joints and morning stiffness and 3% in patients with inactive disease or disease in remission. IgA RF disappeared from active seropositive patients when the disease became inactive. Of thirty-one patients with active disease, 27 were IgA RF positive, of whom 22 were in functional Class III-IV and 5 were in functional Class I-II. In summary, IgA RF is present in the majority of patients with active JRA.

●814 DELAYED PRODUCTION OF INTERFERON-GAMMA (IFNγ) AND TUMOR NECROSIS FACTOR (TNFα) BY MONONUCLEAR CELLS (MC) OF HERPES SIMPLEX VIRUS (HSV) INFECTED NEONATES (NB). Sandra Burchett, Kathey Mohan, Larry Corey, Christopher B. Wilson. Dept. of Pediatrics, Univ. of Washington, Seattle.

The neonate (NB) is susceptible to disseminated HSV. To investigate the role of IFNγ and TNFα, two cytokines potentially important in defense against HSV dissemination, we studied 23 HSV infected (HSV+) NB, 11 uninfected (HSV-) NB and 8 adults (AD) with primary HSV infection. We evaluated MC thymidine uptake (thy) and IFNγ production after ConA or HSV stimulation.

HSV Onset	HSV SI		HSV IFNγ*		ConA IFNγ*	
(Days after)	NB	AD	NB	AD	NB	AD
0-14	2±1+	22±46	3±3	45±51	32±37	600±370
15-29	7±13	32±23	13±16	127±87	183±153	467±282
30-179	7±8	26±34	83±129	159±184	143±147	453±273
>180	22±31	6±4	109±126	72±52	62±53	603±190

+data is x ± SD; *IFNγ U/ml by RIA; SI=stimulation index

HSV stimulated thy and IFNγ response increased with time in HSV+ NB but much more slowly than the AD response. By 28d all AD, but only 3/12 NB, had SI >3 and IFNγ >10 to HSV. HSV- NB did not respond. ConA stimulated minimal amounts of IFNγ in all NB. Production of activity cytolytic for L-929 cells, which was >80% neutralized by antibody to TNFα, by HSV stimulated NB MC correlated with IFNγ. 6/6 NB with IFNγ >10 and 1/6 NB with IFNγ <10 produced TNFα >10 U/ml. NB concomitantly develop the ability to produce HSV stimulated IFNγ and TNFα. Delayed production of IFNγ and perhaps TNF by HSV+ NB may partly explain the difference in severity of infection compared to the AD.

●815 PARADOXICAL INHIBITORY AND STIMULATORY EFFECTS OF HERPES SIMPLEX VIRUS (HSV) ON LYMPHOKINE-ACTIVATED KILLER (LAK) CELLS. Terry W. Chin, Susan Plaeger-Marshall, Bonnie Ank, Sheila Strom, and E. Richard Stiehm. Dept. of Pediatrics, UCLA, Los Angeles, CA.

Strong LAK cell activity induced by interleukin-2 (IL-2) of cord (and adult) mononuclear cells (Pediatr. Res. 19: 271A, 1985) has suggested a possible role for LAK and/or IL-2 therapy in newborns with certain infections. The effect of HSV (type 1) on the LAK effector cell was studied by adding live or irradiated virus (10,000 R) (MOI=10) to 10 cells which have been incubated for 4-6 days with IL-2 (50-100 U/ml). The cells were tested 18-24 hrs later for cytotoxic activity against Cr-labelled K562 and Raji target cells. Live HSV inhibited LAK cytotoxicity of adult cells to K562 by 44% (72 ± 2.4%) to 40 ± 6.2%, n=15) and by 62% against Raji (50 ± 5.6% to 19 ± 4.4%). There was similar inhibition of cord LAK activity. Inhibition was dose dependent and independent of virus replication, since inhibition was observed with irradiated virus. The addition of live virus at the time of the cytotoxic assay or at the beginning of the IL-2 incubation did not affect LAK activity. By contrast, HSV stimulated cytotoxic activity against both targets in the absence of IL-2. The cytotoxicity of adult cells in the presence of live HSV (MOI=10) for 5-7 days increased from 3.3 ± 1.1% in the absence of virus and IL-2 to 19 ± 3.6% against K562 and from 2.2 ± 0.6% to 14 ± 4.4% against Raji targets (n=10). Cord cytotoxicity was stimulated but to a lesser degree.

In sum, HSV inhibits LAK effector cell activity independent of virus replication. Further, HSV alone induces natural cytotoxicity which may represent a unique antiviral defense system.

816 PEDIATRIC HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION IN LOS ANGELES: CONTINUED PREVALENCE OF TRANSFUSION (TX)-ASSOCIATED DISEASE. Joseph A. Church, USC School of Medicine, Childrens Hospital of Los Angeles Departmen of Pediatrics, Los Angeles.

Previous studies indicate that most pediatric HIV infections are acquired transplacentally. The present report documents a contrasting experience. Since 1982, 29 non-hemophiliac patients (pts), 21M, 8F, 2 months to 16 years of age (mean 3 years) have been seen for HIV infections; 9 have died. Seventeen pts had AIDS; 10 had symptoms and immune deficiency caused by HIV; 2 were asymptomatic and immunologically normal.

In 16 pts (14M, 2F) (55%) HIV was transmitted through blood TX. Ten pts (9M, 1F) had been born prematurely. Six pts received blood outside the neonatal period and these included 3 pts (ages 3, 8 and 11 years) who were in remission from acute myelogenous leukemia and Ewing's sarcoma, and status-post renal transplant.

The mothers of 12 pts (6M, 6F) were at high risk for HIV infection. However, only 3 were intravenous (iv) drug users or highly promiscuous. The other 10 monogamous, non-iv drug users were infected by iv drug-using spouses (10), blood TX (1) and artificial insemination (1). A risk factor was not identified in one 16-year-old male. Ages at diagnosis were significantly higher in pts infected with HIV through TX (mean 3 years in prematures, 5.5 years in others) than in maternally-acquired HIV infection (mean 1.5 years).

In summary, the pattern of pediatric HIV infection reported here contrasts sharply with that seen elsewhere. Fewer mothers have been infected through iv drug use or promiscuity and no children have been seen whose mothers were from HIV endemic areas

817 RECURRENT OTITIS MEDIA AND CHRONIC SINUSITIS (OM/SIN) ARE COMMON PRESENTING FEATURES AND COMPLICATIONS IN PEDIATRIC HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION. Joseph A. Church, USC School of Medicine, Childrens Hospital of Los Angeles, Department of Pediatrics, Los Angeles, California.

Although recurrent bacterial sepsis and pneumonia have been reported in pediatric HIV infection, OM/SIN generally are not considered paramount features of the disease. The present report indicated that OM/SIN are often the earliest signs of immunologic compromise. Since 1982, 26 non-hemophiliac children 18M, 8F with HIV infection have been seen. 15 patients (pts), were infected through blood transfusions (TX) and 11 through maternal passage. 13 pts, 12M, 1F, presented with OM (11) or SIN (2) 1 month to 3 years before diagnosis of HIV infection. 9 of these pts had chronic oral candidiasis which had been attributed to use of antibiotics; 9 were failure to thrive attributed to recurrent upper respiratory infections. 11 of these 13 pts had signs and radiographic findings indicative of SIN. 5 pts had undergone otologic surgery prior to diagnosis of HIV. All 13 pts had elevated IgG levels and 12 had T-cell immunodeficiency. Of the 13 pts whose earliest signs were other than OM/SIN, 5 developed OM and 4 SIN since diagnosis of HIV infection. 5 of these pts had normal IgG levels, 1 had hypo-IgG and 12 had T-cell deficiency. 10 of 15 (67%) of pts infected with HIV through TX presented with OM/SIN in contrast to 3 of 11 (27%) of pts with maternally-transmitted HIV. The prevalence of OM (61%) and SIN (57%) in this patient population has not been reported previously, and may be related to the route of HIV infection in these children.