●913 CYTOTOXIC CELL-MEDIATED IMMUNE (CMI) RESPONSES ASSOCIATED WITH CYTOMEGALOVIRUS (CMV) INFECTION AND FETAL WASTAGE. Christopher J. Harrison and Martin G. Myers. Children's Hospital Res. Fnd, University of Cincinnati, Cincinnati, OH.

Infection of inbred Strain-2 guinea pigs (GP) with CMV enhances cytotoxic CMI against CMV-infected syngeneic targets. We investigated this CMI during pregnancy of uninfected and CMV-infected females bred to uninfected strain-2 males. In uninfected dams with successful pregnancies, CMI was comparable to nonpregnant controls (19.2±5.9%) in 1st trimester (19.9±7.9), but suppressed during 2nd (12±7.6) and 3rd trimester (5.6±3.7) and up to 6 wks postpartum while breast feeding (6.2±2.3%). CMI was comparable to nonpregnant female controls by 10d after ceasing breastfeeding (17.8±8.2). Cytotoxic CMI did not decrease by trimester in CMV infected dams (40±15.4, 31±7.8, 42±18.8%) and increased postpartum (58±14.3%). Mean weights of pups from infected dams were less than from uninfected dams (68±21.4 vs 91±9.3 gm). Congenitally infected pups weighed less (54±17.3g) than those exposed but not infected (83.5±9.3 gm).

Uninfected dams that resorbed fetuses or had >50% stillborns/litter had had more pregnancies than those with successful pregnancies (3.3±0.9 vs 1.6±0.9) whereas fetal loss in CMV-infected dams occurred with any pregnancy. Higher CMI was observed during 2nd and 3rd trimesters in uninfected (22±6.8 and 16.4±7.7%) and infected (39.1±7.1 and 48±8.8%) dams experiencing fetal wastage than in dams with successful pregnancy outcome. Thus lack of suppression of cytotoxic CMI to GPCMV in infected or multiparous GP was associated with increased fetal wastage.

914 GENITAL WARTS:CO-INFECTING SEXUALLY TRANSMITTED DISEASES(STD'S) AND MULTIPLE ABUSERS IN GIRLS. Marcia E. Herman-Giddens, Laura T. Gutman, Nancy L. Borson, and Duke Child Protection Team. Duke U. Medical Center, Dept. of Peds, Durham, N.C.

All girls age 11 and under presenting to the pediatric clinic between 1978-1986 with genital warts were evaluated by the Child Protection Team for coinfecting STD's and sexual abuse.

The 11 children were 1.5-3 yrs (5), 3-6 yrs (1) and 6-11 yrs (5). All had perirectal and/or perivaginal warts, diagnosed by inspection (5) or biopsy (6). Nine had condyloma acuminata and two had crops of verruca vulgaris. Nine had findings indicative of sexual abuse including discharge (5), bleeding (5), foul odor (4), hymenal diameter > 10 mm (4), and anal gaping (1).

One or more other STD's were diagnosed in 6 children. Cases/number studied were:

N.gc	T. vag.	bacterial vaginosis	M. hominis	U. urealy
3/11	1/7	1/4	1/4	3/4

The abuser(s) of 7 were identified. Two girls had multiple abusers and 3 others were highly suspected to have had multiple abusers. These 5 children had other coinfecting STD's.

Conclusion: Sexual transmission of genital warts is demonstrated in 9 of the 11 girls by additional indicators including statements from the child, physical evidence, and coinfecting STD's. Children with genital warts should be evaluated for other STD's and sexual abuse. Coinfecting STD's may be an indicator of multiple abusers in children with genital warts.

915 THE CALCULATION OF THE INTRINSIC AFFINITY CONSTANT K FOR ANTIBODY BINDING TO PRP OLIGOSACCHARIDES FROM HAEMOPHILUS INFLUENZAE TYPE B. Seth V. Hetherington, (Spon. by Martha Lepow) Albany Medical College, Department of Pediatrics, Albany, New York.

We postulate that the affinity of antibody against polyribosylribitol phosphate (PRP) may be as important as concentration in host defense against Haemophilus influenzae b (Hib), and may differ for T-independent and T-dependent antigens. Using oligosaccharides (OS) from Hib we measured the intrinsic affinity (K) of antigen antibody binding rather than the relative avidity of antibody for multivalent antigen. PRP-OS were produced by acid hydrolysis and gel filtration; sized according to the number of repeating units (T/R); and radiolabelled. Affinities of purified bacterial polysaccharide hyperimmune globulin (BPIG) and of sera from vaccinated adult donors were measured by a modified Farr assay, and the total antibody binding sites (Abt) calculated. BPIG bound to OS of T/R=4, 3 and 2 with K=3.5, 2.3 and 1.5×10^5 M^{-1} respectively, while Abt was constant. Serum from ten adults vaccinated with one dose of PRP-diphtheria toxoid conjugate (PRP-D) had an average K=5.1±4.1x10^5 M^{-1}, compared to nine PRP vaccinated subjects with an average K=6.5±4.1x10^5 M^{-1} (p>0.1). We conclude that anti-PRP IgG binds PRP-OS with low affinity that decreases with the size of OS. Since total antibody binding sites did not vary by OS size, these data suggest that there were no subpopulations of antibody with binding restricted by OS size. Finally, the intrinsic affinity of the primary antibody response is similar regardless of vaccination with PRP or PRP-D, though further studies may show different affinities with secondary antibody responses.

916 DIAGNOSIS OF INFECTION WITH BORDETELLA PERTUSSIS. Erik L. Hewlett, Kenneth Bromberg, Mary C. Gray, David R. Harcus, and Martha A. McLafferty, (Spon. by Alan D. Rogol) Schools of Medicine, University of Virginia, Charlottesville, VA and SUNY-Downstate, Brooklyn, NY.

In the past, three methods have been used to provide laboratory confirmation of the clinical diagnosis of infection with B.pertussis (Bp): culture, direct fluorescein-labelled antibody-stained smear (FA) and serology. Each, however, is frought with problems, including requirement for fresh, selective medium, slow growth of Bp organisms, interobserver variability in FA reading, and need for paired specimens in serology. Two new methods show promise in pertussis diagnosis. First, DNA hybridization using a sequence highly repeated in the pertussis genome can identify as few as 10^3 Bp in nasopharyngeal (NP) secretions. Second, Bp adenylate cyclase can be detected by enzymatic assay of the organisms also in NP secretions. In this study, specimens from 21 children with cough and vomiting were evaluated for Bp infection with five methods: 1) culture; 2) FA; 3) agglutinin serology; 4) DNA hybridization and 5) adenylate cyclase assay. All but one of the children were < 1 year of age and had received no DPT. Two or more tests were positive for 9 of the 21 patients. The sensitivities for identification of Bp infection by these tests were: culture, 44%; FA, 67%; adenylate cyclase 67% and DNA probe 89%. These data indicate that use of NP secretions and the recently developed DNA probe can provide a rapid and sensitive method for pertussis diagnosis which is superior to currently available procedures.

●917 CORRELATION BETWEEN RESPIRATORY SYNCYTIAL VIRUS (RSV) GLYCOPROTEIN SPECIFIC MATERNAL ANTIBODIES AND RSV DISEASE OF INFANTS. Stephen W. Hildreth, Robert B. Belshe, Peter R. Paradiso, David H. Smith. Praxis Biologics, Rochester, NY; Marshall University, Dept. of Medicine, Huntington, WV.

The greatest risk for severe RSV disease occurs in children less than 6 months of age, often in the presence of maternal antibody. We have dissected the maternal antibody donation to determine the quantitative differences that may account for variations in the severity of primary RSV infections.

Using a case control design (N=42), we measured RSV glycoprotein (F and G) antibodies in cord sera obtained from infants hospitalized with RSV during their first year of life and non-hospitalized DOB matched controls. Using EIA, no difference was found between pairs with regard to total F antibodies. However, controls had a significantly higher functional F antibody titer as measured by an anti-syncytia assay ($p<0.001$). Controls also had a significantly higher total G titer ($p<0.001$), which was reflected in a significantly higher neutralization titer ($p<0.02$) when compared to hospitalized infants. The data suggest protection from severe disease during the first year of life correlates with the magnitude of the antibody response to the G glycoprotein for conferring neutralization and to the F glycoprotein for conferring inhibition of syncytia.

918 ACTIVATION BY CANDIDAL B-GLUCANS OF THE AMEBOCYTE LYSATE CLOTTING CASCADE OF THE JAPANESE HORSESHOE CRAB TACHYPLEUS TRIDENTATUS. David S. Hodes, Ada Hass, Dennis Heon, Alexander C. Hyatt and Horace L. Hodes. Dept. of Pediatrics, Mount Sinai School of Medicine, New York, NY

We have previously reported that cultures of C. albicans activated the amebocyte lysate clotting cascade of the Japanese horseshoe crab Tachypleus tridentatus. In order to isolate the active agent in these cultures, hydrophilic molecules were solubilized by autoclaving the cells in distilled water and testing the resulting aqueous extract. Strongly positive results were obtained. Because previous work showed that the cascade could be activated by synthetic β-glucans, we isolated naturally occurring β-glucans from the fungi, using the alkaline Fehling's solution tehnique of Peat and of Grimmecke. β-glucans isolated in this fashion activated the cascade. By contrast, commercially prepared α-glucans (glycogen, starch) had no effect.

In contrast with these findings, commercial amebocyte lysates of the American horseshoe crab Limulus polyphemus gave equivocal and inconsistent results.

The possibility that our results were due to contaminating endotoxin was excluded in two ways. First, when quantities of endotoxin were deliberately added to our preparations in reconstruction experiments they were undetectable after our washing procedures. Second, our preparations did not react appreciably with a Tachypleus preparation (Seikagaku Kogyo, Tokyo) made specific for endotoxin by the removal of an alternate activation pathway. It is postulated that it is this pathway that is activated by fungal β-glucans. Clinical applications based on this differential activation of the cascade by fungal and bacterial products are currently being explored.