1128 INTRAVENOUS IMMUNE SERUM GLOBULIN (IVIG) FOR PROPHYLAXIS AND TREATMENT OF RESPIRATORY SYNCYTIAL VIRUS (RSV) INFECTION IN THE COTTON RAT. Gregory A. Prince, Val G. Hemming, Robert L. Horswood, Brian R. Murphy, and Robert M. Chanock (Spon. by Gerald W. Fischer). NIAID, National Institutes of Health, and Department of Pediatrics, Uniformed Services University, Bethesda, MD.

Cotton rats receiving IVIG were challenged intranasally 24 hrs later with RSV. These animals and concomitantly infected controls were sacrificed 4 days later. Animals treated with IVIG showed a 100- to 1000-fold reduction in pulmonary virus compared to controls, and a lesser, though highly significant reduction in nasal virus. Cross-homogenization experiments showed the reduced viral titers to be in vivo phenomena, rather than in vitro viral neutralization occurring at the time of tissue homogenization. Several lots of IVIG, all with high neutralizing titers against RSV, were tested in cotton rats, with similar results. Protection was dose-dependent, and was maximal when circulating antibody titers were greater than 1:250. Cotton rats previously infected with RSV were given IVIG to determine if it might alter the course of infection. Animals receiving IVIG as little as 3 hrs prior to sacrifice showed highly significant reductions in pulmonary and nasal viral titers, with the effect greatest in the lungs (geometric mean reduction of over 100-fold). Cross-homogenization experiments showed the reduction to be bona fide in vivo viral neutralization, rather than in vitro artifact. Histologic studies of lungs of IVIG treated animals showed no histopathological abnormalities.

1129 HYPONATREMIA AND ADH SECRETION IN TUBERCULOUS MENINGITIS IN CHILDREN. Madu Rao, Walter Greenfield Ira Woletsky, Ruth Atlas, Lew Herod, Phillip Steiner, and Laurence Finberg, SUNY, Downstate Medical Center, Department of Pediatrics, Brooklyn, New York

Hyponatremia is consistently found in children with tuberculous meningitis, and is believed to occur secondary to CNS involvement and a decrease in circulating volume. The latter stimulates ADH secretion resulting in dilutional hyponatremia. In 1952 Harrison and Finberg showed carefully that in severe tuberculous infections there is a disturbance of mechanism governing ionic equilibrium between cells and extracellular fluid resulting in hyponatremia.

We provide evidence in the following report that ADH may not be the cause of hyponatremia in TBC meningitis. In a 10 month old child with TBC meningitis, ADH levels (measured by radioimmune assay as adopted from Dr. D. Fisher's lab) were normal (N:0.7-1.7 mu/ml) during periods of hyponatremia with normal circulating volume. ADH level of 4.3 on Day 8 was perhaps secondary to the surgical procedure of ventricular drain.

	Day 1	Day 2	Day 3	Day 6	Day 8
B.P.	110/70	115/70	106/70	113/69	110/68
Wt(gms.)	8300	8300	8312	8500	8942
SP. Gr.	1110	--	1015	1018	1010
Na	126	130	134	130	127
ADH (mu/ml)	1.3	1.4	---	--	4.3

1130 RESPONSE TO IMMUNIZATION IN THE PREMATURE NEWBORN. Stanley E. Read, Zulaika Ali and Hugo F.M.Reid. The Hospital for Sick Children, Toronto, Canada; Mount Hope Hospital and the Public Health Laboratory, Trinidad.

The human immune system is not fully competent at the time of birth and is even more immature with earlier gestational age at delivery.

We are studying the immune response of prematures born at Mt. Hope Hospital, Trinidad to determine the optimal time of immunization. Neonates are divided into four groups based on birth weight. Each group is further subdivided into two subgroups, one immunized 6-8 weeks after birth and the other 6-8 weeks after calculated full term. Immunization includes diphtheria, pertussis tetanus and polio. Immune response is measured by tetanus toxoid antibody and cellular responses.

To date, 50 neonates have been entered into the study. Thirty-nine have completed the primary series of three immunizations and 27 have had at least one follow-up sample. Twelve of the neonates were less than 1500g at birth. Eleven of the 12 have had appropriate antibody responses. The baby who did not respond had a high titer of passive maternal antibody at birth (4.2 I.U./ml) and the absence of response may be related to this. No differences in response have been observed with early and late immunization. Cellular responses to tetanus toxoid were variable. Forty-two percent of babies showed in vitro reactivity to tetanus at birth. However, only 30% were reactive following the primary immunization series. Blastogenic responses to streptococcal antigens fluctuated with the tetanus responses, suggesting no specificity in the blastogenic response in these neonates.

†1131 STAPHYLOCOCCAL EPIDERMIDIS SLIME EFFECTS ON BACTERIAL OPSONIZATION AND PMN LEUKOCYTE FUNCTION. W. Regelmann, Ernie D. Gray, Priscilla Thomas, and George Peters, Univ. of MN, Dept. of Pediatrics, Minneapolis, and Hygiene Institute, Univ. of Cologne, West Germany.

Many Staphylococcus epidermidis (S. epi) strains isolated from patients with catheter related infections produce an extracellular "slime". This slime probably mediates adhesion of this bacterium to plastic, inhibits the lymphoproliferative response to polyclonal activators and may prevent serum opsonins or polymorphonuclear phagocytes from functioning normally. To examine its effects on opsonization, increasing amounts of staphylococcal slime were added to pooled human serum (PHS), radiolabeled S. epi (2 strains) or E. coli (ON2), and incubated in this mixture for 15 min/37°. The washed bacteria were incubated in fluid phase with PMN's for varying times and the percent of cell associated bacteria determined. Slime decreased the percent of cell associated S. epi and E. coli in a dose dependent manner and killing of E. coli was markedly decreased. To examine its effects on phagocyte function, slime was added in increasing amounts to PMN's to which radiolabeled S. epi and E. coli preopsonized in PHS alone were then added. Slime interfered in a dose dependent manner with PMN uptake of preopsonized S. epidermidis but did not alter PMN uptake nor killing of preopsonized E. coli. We conclude that slime 1) interferes with opsonization of both S. epi and E. coli and 2) that it interferes with PMN phagocytosis of preopsonized S. epi but not preopsonized E. coli. These findings may relate to the persistence of S. epi catheter associated infections.

1132 THE EFFECTS OF BACTERIAL SEPSIS ON MYOCARDIAL FUNCTION Dan Riggs, Gail Wellenstein, Terrence Dillon, Sue Corlew, Alice Cushing & William Berman, Jr., UNM, Ped. Dept., Albuq., NM

We studied the effects of serum from children with bacterial sepsis and poor cardiac function on isolated myocardial muscle performance. We measured the force (F_{max}-mg) and dF/dt (gm/sec) of isolated dog papillary muscle contraction. Control serum was obtained from 3 uninfected subjects and a normotensive child with S. aureus bacteremia. Our 4 study subjects had hypotension and bacteremia due to either H. influenza, N. meningitidis, Yersinia pestis or D. pneumoniae. All study subjects required mechanical ventilation and inotropic support - mean LV % fractional shortening = 21%(nl=28-40%), mean Doppler cardiac output = 3.2 L/min/M^2 (nl=2.5-4.5) and mean systemic vascular resistance = 11.6 units (nl=18-28). Baseline F_{max} and dF/dt were compared to values measured 10 minutes after the addition of 0.3-1.0 ml of serum to the 50ml muscle bath.

Results:	F_{max}	dF/dt	
Baseline	555±104	3.42±0.69	
Control	723±134	3.97±0.91	*differs from
Study Subjects	336±150*	2.03±0.81*	baseline($p<.05$)

Serum from study subjects caused significant reductions in F_{max} and dF/dt. We conclude that children with bacteremia and depressed myocardial function have a serum myocardial depressant factor which may also reduce vascular tone. Definition of this factor may provide new directions for the early management of hemodynamic distress in these critically ill subjects.

●1133 FECAL ADENOVIRUSES (FAd) FROM A LONGITUDINAL STUDY OF FAMILIES IN METROPOLITAN WASHINGTON DC: LABORATORY, CLINICAL & EPIDEMIOLOGICAL OBSERVATIONS. Wm. J. Rodriguez, Hyun W. Kim, Carl D. Brandt, Richard H. Schwartz, Mary K. Gardner, Robt. H. Parrott, Richard A. Kaslow, Jackie Smith and Howard Takiff. Children's Hosp Nat Med Ctr & George Washington University School of Medicine, Washington DC; NIH, Bethesda MD.

During a 29-month period, we studied enteric infection in 70 families (134 children, 136 adults) from a pediatric practice in suburban Washington. The subjects represent a cohort followed longitudinally. FAd were detected in stools of 18 patients and studied by at least one of three methods: 1) culture, electron microscopy or immune electron microscopy plus neutralization, 2) restriction endonuclease analysis, or 3) hybridot probe. During the 2nd year of life, 10 of every 100 individuals had gastrointestinal (GI) illness temporally associated with the presence of FAd. Only three of the FAd identified in children with diarrhea were enteral adenoviruses (EAd). They were group G by restriction endonuclease analyses (EcoRI, KpnI). In children 6-23 months of age, the incidence of FAd associated with enteritis was 4-10 per 100 per year; with confirmed EAd infection, 2-3 per 100 per year. All patients with EAd had diarrhea, but none required hospitalization. Those who excreted EAd had vomiting (66%), diarrhea (100%) and fever (33%). None of 9 contacts (6 adults, 3 children) of those who had EAd enteritis shed adenovirus in stool. In contrast, within the same family groups, rotavirus spread readily to adults (16/65, 25%) and children (36/62, 56%).