1081 NEONATAL SEPSIS: PREDICTIVE VALUE OF 48 HOUR CULTURE RESULTS. Dennis T. Crouse, Jatinder S. Bhatia and Oommen P. Mathew (Spon. by D.K. Rassin), Department of Pediatrics, University of Texas Medical Branch, Galveston, Tx.

Traditionally, antimicrobial therapy is discontinued in neonates with suspected sepsis when the cultures are reported negative at 72 hours. Rising hospitalization costs and the trend towards early discharge led us to examine the reliability of 48 hour culture results as a guide towards discontinuation of antimicrobial therapy. In a two-part study (Retrospective 69 months; Prospective 2 months), 48 and 72 hour reports of blood and cerebrospinal fluid (CSF) cultures from term neonates were evaluated.

Results:

Group	Blood Cultures N	Cumulative 48 (hrs)	# Pos. 72	CSF Cultures N	Cumulative 48 (hrs)	# Pos. 72
Retrospective	530	27	28	280	2	2
Prospective	76	3	3	41	1	1

The following pathogens were isolated: Group B and D Streptococcus, E. coli, Enterococcus, H. influenzae, and Streptococcus pneumoniae. The single blood culture that was reported positive at 72 hrs but not at 48 hrs was due to H. influenzae; this symptomatic infant received a full course of antibiotics. Discontinuation of antibiotic therapy in clinically well infants based on 48 hr culture results does not appear to compromise quality of medical care and could even facilitate early discharge of term neonates.

1082 NEONATAL OSTEOMYELITIS DUE TO METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS. Dennis T. Crouse, Oommen P. Mathew and Jatinder Bhatia (Spon. by D.K. Rassin), Department of Pediatrics, University of Texas Medical Branch, Galveston, Texas.

Neonatal osteomyelitis is rare. However, since the first isolation of methicillin-resistant Staphylococcus aureus 20 months ago in our nursery, we have diagnosed 4 cases of osteomyelitis due to methicillin-resistant Staphylococcus aureus. During this period we have encountered 8 infants with systemic disease, 2 infants with localized disease and 8 infants with colonization alone due to methicillin-resistant Staphylococcus aureus. Blood cultures were positive in 3 of 4 infants with osteomyelitis. Their mean birthweight was 1070 g and the mean gestational age was 29.6 weeks. Incidence of central line placement, need for multiple transfusions and prolonged total parenteral nutrition therapy indicate their complicated hospital course. The onset of the osteomyelitis was insidious and the early symptoms were non-specific. Multiple bones were involved in 2 infants, and 3 infants developed septic arthritis requiring surgical drainage. These infants were treated with vancomycin for 6-8 weeks. In contrast, the infants with colonization alone were larger, and has less complicated hospital courses. Our experience suggests that the infants developing systemic disease due to methicillin-resistant Staphylococcus aureus are similar to those acquiring Candida infection. However, unlike disseminated candidiasis significantly greater number of neonates with methicillin-resistant Staphylococcus aureus infection develop osteomyelitis.

●1083 SALINE-WASHED RED BLOOD CELLS (WRC) UNSUCCESSFUL IN PREVENTING POST-TRANSFUSION CYTOMEGALOVIRUS INFECTION (PTCMV) IN NEONATES. Gail J. Demmler, Michael T. Brady, Hedy Bijou, Michael E. Speer, John D. Milam, Edith P. Hawkins, Donald C. Anderson, Martha D. Yow, Baylor College of Medicine, Texas Children's Hospital, Depts. of Peds. and Path., Houston.

CMV-seronegative and frozen-deglycerolized blood, when used to prevent PTCMV, have disadvantages of increased cost and limited availability. CMV harbored within leukocytes is the presumed source of PTCMV. With the IBM 2991 Blood Cell Processor, we achieved 89% reduction in white blood cells using a protocol of long spins (2.5 to 5 min) and slow superout rate (200 ml/min). The average post-wash count was 1300/cu mm (range 200-3000). Fresh frozen plasma (62 units) and platelets (27 units) were given without special preparation. We followed 54 CMV-seronegative neonates who received WRC. Birth weights (BW) were less than 1500 gm in 43%. Infants received 1-36 WRC transfusion (avg 6.0 per patient). These WRC were 51% seropositive. Serology (ELISA) and viral cultures were performed at an average of 89.6 days (range 18-147) following the last transfusion. Six infants developed laboratory evidence of CMV infection. Infections in 5 of the infants were asymptomatic (BW 1060, 1960, 2180, 2270 and 3500 gms). One infant (BW 720 gm) died after a very complicated course. Dissemination of CMV was noted at autopsy. Presently available methods of leukocyte depletion are inadequate to prevent PTCMV. Our data suggest that CMV-seronegative and frozen deglycerolized blood are preferable to WRC. However, the lack of symptoms in the infected infants suggests that WRC may offer an advantage over conventional blood products.

1084 OUTCOME OF RESPIRATORY SYNCYTIAL VIRUS (RSV) INFECTION AFTER PRIOR SYSTEMIC IMMUNIZATION WITH INACTIVATED RSV VACCINE. Rita Dhar, David T. Wong, Karen A. Hovey, Pearay L. Ogra. State Univ. of New York at Buffalo, Div. of Inf. Dis., Children's Hospital of Buffalo.

Two to three month old cotton rats, seronegative for RSV antibody were immunized at weekly intervals with three doses of intraperitoneally administered preparation of formalin inactivated and alum precipitated RSV. Other groups of animals who received rabbit serum containing high levels of RSV antibody or normal rabbit serum (NRS) were included as controls. Following RSV immunization all animals developed RSV specific antibody in serum when tested a week after the administration of the last vaccine dose, and RSV antibody persisted in the control group who received RSV immune serum. All animals were challenged intranasally with live RSV in a dose of $2x10^5$ PFU/animal and sacrificed 4 days later. High levels of the virus were detected in nasal turbinates and lungs of the control group which received NRS, and little or no virus was recovered from animals who received immune serum or inactivated RSV vaccine. Histological studies did not reveal any pathology in the lungs of non-vaccinated controls. Significantly, severe bronchoalveolar pathology was observed in all RSV vaccinated animals after live virus challenge. These observations are identical to the clinical experience with experimental use of inactivated RSV vaccine in infants. This model should be applicable to evaluation of prior exposure to live or inactivated antigens, or systemic versus mucosal priming in the evolution of viral immunopathology.

†1085 EFFECT OF PASSIVE IMMUNOPROPHYLAXIS ON THE OUTCOME OF EXPERIMENTALLY INDUCED INFECTION WITH RESPIRATORY SYNCYTIAL VIRUS (RSV): Rita Dhar, David T. Wong, Karen A. Hovey, Pearay L. Ogra, State University of New York at Buffalo, Division of Infectious Diseases and Microbiology, Children's Hospital of Buffalo.

Groups of two to three month old cotton rats seronegative for RSV antibody were administered rabbit anti-RSV serum with RSV antibody titer of 1:1024 as determined by neutralization test or RSV antibody negative normal rabbit serum, via intraperitoneal (IP), subcutaneous (SC) or intranasal (IN) routes. Twenty-four hours after the administration of serum, all animals were challenged IN with $2x10^5$ PFU of Long strain live RSV and sacrificed four days later. Quantitation of RSV replication in the lungs and nasal turbinates was performed in HEp-2 cell cultures. High levels of RSV replication was observed in the lungs ($10^{3.5}$ PFU/gm of tissue) and nasal turbinates ($10^{2.5}$ PFU/gm of tissue) of rats that received normal rabbit serum. However, animals that were treated with rabbit RSV antibody-rich serum exhibited 100 to 1000 fold reduction in the titer of virus recovered. The protective effect observed was more significant in the lungs than in nasal turbinates, regardless of the route of administration of immune serum. Furthermore, passive administration of RSV antibody was associated with attenuation of pulmonary histopathology, and no immune complexes were demonstrated in the lungs. These results suggest that high levels of passively administered RSV antibody at the mucosal site or in the peripheral circulation may limit the replication of the virus in respiratory tract and thus modify the outcome of subsequent respiratory disease.

† 1086 LONGITUDINAL ASSESSMENT OF ANTIBODY RESPONSE OF CHILDREN WITH RENAL DISEASE TO PNEUMOCOCCAL VACCINE Robert P. Drucker, Mary V. Moggio, Randall E. Harris, Gerald Schiffman, Catherine M. Wilfert Duke Univ Med Center Dept. of Pediatrics, Durham, NC

56 children, including nephrotic syndrome (NS) patients, renal transplant (TX) recipients and normals, aged 2 to 15 years, were given a pneumococcal vaccine containing 14 polysaccharide (PS) types. Vaccine A with 50ug of each PS type was compared to Vaccine B with 25ug of each type. Study divisions were: Group 1)16 NS patients, Vaccine A; Group 2)10NS patients, Vaccine B; Group 3)3 TX patients, A; Group 4)10 TX patients, B; Group 5)10 normals A; Group 6)7 normals, B. Antibodies were determined for each PS type before, and 1, 3, 12 and 24 months after vaccination. At 1 month: a)the two vaccines produced comparable geometric mean titers (GMT) for 7/12 PS types in normals, 2/14 in NS patients, and 2/14 in TX patients. b)Vaccine B produced higher GMT's for 4/12 PS types in normals and for 11/14 in NS patients. c)Vaccine A produced a greater GMT for 12/14 types in TX patients. The seroconversion rates were similar within paired groups. By 24 months the GMT was $\leq$ the pre-vaccine level for 9/12 types in Group 1, 7/12 Group 2, 11/12 Group 3, 6/12 Group 4, 6/12 Group 5, and 3/12 Group 6. The GMT was greater than the assumed protective level of 300 ng antibody N/ml for 4/12 types in Group 1, 5/12 Group 2, 4/12 Group 3, 4/12 Group 4, 5/12 Group 5, and 10/12 Group 6 at 24 months. 25ug of PS provided a similar immune response to that induced by the currently employed 50ug dose. Waning antibody titers suggest that longitudinal assessment of protection is essential and the possible need for booster doses remains to be determined.