**†1086** INTERACTION OF CHLAMYDIA TRACHOMATIS (Ct) AND POLYMORPHONUCLEAR LEUKOCYTES (PMNS): A POSSIBLE ROLE IN VIRULENCE. M.R. Hammerschlag, K. Suntharalingam, A. Gleyzer, S. Fikrig. SUNY-Downstate Medical School, Dept. of Pediatrics, Brooklyn, New York.

Although Ct is an obligate intracellular parasite, it is classified as a bacterium. However, little is known about its interaction with human PMNS. Factors playing a role in the opsonization of Ct were investigated using luminol dependent PMN chemiluminescence (LDCL). We tested 2 strains of Ct: a genital isolate and an LGV ($L_2$). The Ct were grown in cell culture and purified by differential centrifugation and passage through 35% renograffin. Ct alone failed to induce a significant degree of LDCL compared to serum activated zymosan (< 90%) Ct mixed with human sera generated significant LDCL. This effect of the serum was independent of the presence or absence of specific anti-chlamydial antibody or complement. Primate serum had 77% of the activity of human serum, non-primate species (sheep, horse, cow, rabbit) demonstrated substantially less activity (<90%). The magnitude of LDCL was also related to the Ct: PMN ratio with greatest activity at 10:1. Human sera with IgG <100 mg/dl did not stimulate LDCL more than Ct alone.

These results suggest that human IgG, or other components of human serum interact with Ct independent of specific antibody binding sites. This factor in human serum also does not appear to be a natural or cross reacting antibody. The interaction of Ct with human IgG could serve to increase the virulence of the organism in a manner analogous to that propsed for staphylococcal protein A.

**1087** NOSOCOMIAL INFECTIONS (NI) IN A NEONATAL INTENSIVE CARE UNIT (NICU) AND CONTROL OF A METHICILLIN RESISTANT (MR) S. AUREUS (SA) OUTBREAK. Jo-Ann S. Harris and Tom D.Y. Chin (Spons. by Cheng T. Cho), Univ Ks Col of Hlth Sci and Hospital, Depts of Comm Health and Peds, Ks City, Ks.

The evaluation and control of endemic and epidemic NI in a NICU is critical to decrease associated morbidity and mortality and to maintain full functional capacity of such a unit. NI in our NICU were studied from Jan 1981-Dec 1982 after moving into a new hospital. The rate increased from 7.9% (NI/pts at risk) in 1980 to 11% in 1981 and 18% in 1982. Of 561 infants hospitalized over 48 hrs, there were 107 (19%) NI in 66 pts. Major sites of infection were: 21% blood, 7.5% resp, 6% wound, 3% CNS and 1% other. 59% were surface infections. Infection rates were inversely proportional to birth wt, 54% occurring in pts < 1500 gms. Deaths occurred in 7.7% of infected and 9% uninfected pts. 77% of the NI were due to gm + organisms which was unusual, and only 9% were gm -. During the 2 yr period, of the 116 pathogens isolated, 54% were SA. This was accompanied by a high prevalence of SA colonization (32-38%). An outbreak of MRSA began in Jan 1982. Over the next 14 months there were 43 SA infections, 47% were MR. By Nov 1982, 47% of infants surveyed were colonized with SA, 80% of which were MR. What we found was that the additional infection control measures instituted in Feb 1982 (cohorting of infants and personnel and triple dye on the umbilicus) did not alter the outbreak. Two infants were identified as major sources of MRSA. The epidemic terminated abruptly, only following removal of the 2 infants. This control measure rapidly eliminated disease and markedly reduced colonization.

**1088** INTRAVENOUS IMMUNE GLOBULIN (IVIG) FOR THE TREATMENT OF RESPIRATORY SYNCYTIAL VIRUS (RSV) INFECTIONS: STUDIES IN THE OWL MONKEY. Val G. Hemming, Gregory A. Prince, William T. London, Bryan R. Murphy, Gerald W. Fischer, and Robert M. Chanock. Department of Pediatrics, Uniformed Services University, and NIAID, National Institutes of Health, Bethesda, MD.

We recently showed that some lots of pooled human IVIG, contained titers of RSV neutralizing antibodies sometimes exceeding 1:10,000. Passive immunization of infected cotton rats with high-titered RSV-IVIG induced large reductions in the numbers of RSV recovered from both turbinates and lungs. Hence, 21 owl monkeys were challenged intratracheally with 1 x $10^6$ pfu of RSV (A-2). Nasal and lung washes were performed every other day for quantitative RSV cultures. Treatment animals (n=13) received 3 g/kg IVIG infused intravenously over a period of 24 hr. Peak RSV shedding occurred in all animals on the 5th infection day. Control animals had a slight reduction of RSV on the 7th day. In contrast IVIG treated animals experienced 100 to 1,000 fold reductions in RSV in both nasal and lung washes. No evidence of pulmonary or systemic toxicity was observed after IVIG administration. Chest x-rays remained normal throughout the study in both control and treatment animals. These data suggest that passive immunotherapy with high-titered IVIG may be of value in the prophylaxis or treatment of lower respiratory tract RSV infections in infants and young children.

**1089** RESPIRATORY SYNCYTIAL VIRUS (RSV) NEUTRALIZING ANTIBODY TITERS IN HUMAN IMMUNE SERUM GLOBULIN FOR INTRAVENOUS (IVIG) INFUSION. Val G. Hemming, Leonard E. Weisman, Gregory A. Prince, Robert L. Horswood and Gerald W. Fischer. Department of Pediatrics, Uniformed Services University, and NIAID, National Institutes of Health, Bethesda, MD.

During studies of pharmacokinetics of IVIG in neonates, an infant with a serious lower respiratory tract infection was treated with IVIG and experienced an unexpectedly prompt recovery. Viral cultures of the infant's secretions subsequently grew RSV. Analysis of the IVIG lot infused yielded an RSV neutralizing titer of 1:3,276. This prompted a screen of 23 other lots of human IVIG prepared by 3 manufacturers (Cutter Inc., 7 lots; Sandoz Inc., 9 lots; Hyland Laboratories, 7 lots). Eight lots had neutralizing RSV titers exceeding 1:10,240; titers of the others ranged from 1:1,559 to 1:9,344 (ave. 1:4,438). RSV complement fixation (CF) titers generally mirrored the neutralizing titers. However, the RSV CF titers in the 20 lots were generally about 10-fold higher than CF titers to influenza A, B, parainfluenza 1, 2, 3 and adenoviruses. Reinfection of humans by RSV is common. Coupled with the annual RSV outbreaks in most communities, recurrent reexposure probably accounts for the high titers in the IVIG lots. The data suggested that IVIG may be suitable for prophylaxis or treatment of RSV infections. Utilization of high titered RSV-IVIG preparations for passive immunotherapy of RSV disease is currently being examined in cotton rat and owl monkey models.

**●1090** DIAMINODIPHENYLSULFONE (DAPSONE): A NEW DRUG FOR PNEUMOCYSTIS CARINII PNEUMONITIS. Walter T. Hughes and Bessie L. Smith. St. Jude Children's Research Hospital, Division of Infectious Diseases, Memphis.

Using the corticosteroid-antibiotic-primed rat model for P. carinii pneumonitis (PCP) we previously demonstrated the efficacy of trimethoprim-sulfamethoxazole (TMP/SMZ) for treatment of this infection (SPR-1974). Subsequent studies in humans (SPR-1975) showed excellent correlation with the animal model. Recently, it has become apparent that patients with acquired immunodeficiency syndrome (AIDS) uniquely experience a remarkably high rate of adverse reactions to TMP/SMZ. Since PCP is a major life-threatening infection with AIDS, alternative drugs are needed. We have undertaken studies to develop new agents for the treatment of PCP. The experimental design is based on the premise that dexamethasone-tetracycline administration for 6 weeks or longer will almost invariably provoke PCP in the rat. Drugs administered during the period of immunosuppression can be tested for efficacy in comparison to untreated controls. In a series of experiments we have tested 10 drugs in this manner. The results are as follows (no. animals with PCP/no. tested): allopurinol 10/10, diloxanide furoate 10/10, nifurtimox 10/10, ketoconazole 10/10, difluoromethylornithine 10/10, melarsoprol 10/10, suramin 10/10, primaquine-chloroquine 10/10, gentian violet 8/10 and diaminodiphenylsulfone 0/10. Controls (total) = 48/50. We conclude that the dapsone administered orally in the dose of 25.0 mg/kg daily is effective in murine PCP.

**†1091** MOLECULAR EPIDEMIOLOGY OF CYTOMEGALOVIRUS (CMV) IN DAY CARE CENTERS (DCC). Cecelia Hutto and Robert F. Pass, University of Alabama in Birmingham, Department of Pediatrics, Birmingham, Alabama.

Recent epidemiologic studies in which the rate of CMV excretion among children in group DCCs was found to be significantly higher than the rate of seropositivity to CMV among controls suggest that horizontal transmission of CMV occurs within this setting. We analyzed CMV isolates from children in a DCC with a high rate of infection for relatedness using restriction endonucleases. DNA extracted from the viral isolates was cleaved using BAM Hl and Hind III. Isolates obtained from 3 children in one classroom, ranging in age from 22-26 months, yielded identical restriction patterns with both enzymes. For 3 other children, aged 28-34 months and cared for in a different classroom, identical restriction patterns were found that were different from the first group of children and also different from restriction patterns produced using epidemiologically unrelated strains. During a 24 month period, 2 of 35 susceptible mothers of children in the DCC seroconverted. Both had seronegative husbands, a single child in the center who was viruric and no other known source for the virus. Viral isolates from both mothers and their children were obtained and they are being examined using restriction endonucleases. Both epidemiologic and molecular techniques indicate that CMV is transmitted frequently between children in group DCCs. Exposure risks for parents of these children and workers in DCCs must be determined.