757 COUNTERCURRENT IMMUNOELECTROPHORESIS (CIE) OF RESPIRATORY SECRETIONS IN THE DIAGNOSIS OF PNEUMONIA. Blaise L. Congeni and George A. Nankervis (Sponsored by Donald N. Medearis). Case Western Reserve University School of Medicine at Cleveland Metropolitan General Hospital, Department of Pediatrics, Cleveland, Ohio.

Several recent studies in adults have indicated that CIE as opposed to routine culture of sputum can distinguish patients with pneumococcal pneumonia vs. those simply colonized with the pneumococcus - CIE being positive in the former and negative in the latter. A prospective study was undertaken to evaluate this observation by performing CIE determinations on nasopharyngeal (NP) secretions in 14 children with bacterial pneumonia as evidenced by physical and radiologic findings as well as the presence of leukocytosis, response to a penicillin and in some cases evidence of bloodstream invasion. Thirty-five children with other types of respiratory illness served as controls. Nine of 13 from the pneumonia group had pneumococcal antigen in their NP secretions. Three of 4 negative patients had evidence of disease due to type-14 pneumococcus, not generally detected by CIE. The one additional pneumonia patient had a positive blood culture for Hemophilus influenzae type b (Hib) and Hib antigen was present in the NP secretions. In the control group, one patient had pneumococcal antigen and one patient had Hib antigen in the NP secretions, although 17/35 were positive for pneumococcus by culture. CIE on NP secretions is reliable in distinguishing patients with pneumococcal pneumonia vs. those who are simply carriers ($p<.001$).

758 PREVENTION OF ENDOTOXIN EFFECTS IN A GRAM-NEGATIVE SEPTICEMIA MODEL WITH POLYMYXIN B. James J. Corrigan, Jr. and James F. Kiernat. Department of Pediatrics, University of Arizona Health Sciences Center, Tucson, Arizona.

The antibiotic polymyxin B sulfate has been shown to neutralize endotoxin lethality in chick embryos and adrenalectomized mice and to prevent endotoxin induced leukopenia, thrombocytopenia disseminated intravascular coagulation and renal cortical necrosis in rabbits. In this study, the anti-endotoxin effect of polymyxin B was investigated in experimentally induced septicemia in rabbits. The Pasteurella multocida organisms were sensitive to the antibacterial action of penicillin, but not to polymyxin B. Twenty-five animals pretreated with polymyxin showed positive blood cultures and significantly reduced plasma endotoxin levels (Limulus test) with normal white blood cell and platelet counts when analyzed six hours after the injection of live organisms. Polymyxin therapy, given after the animals had established endotoxemia-septicemia, reduced the plasma endotoxin levels and improved the survival, but had no effect on the leukopenia and thrombocytopenia. Forty-seven control animals treated only with saline revealed the characteristic findings of positive blood cultures, high endotoxin activity levels, severe leukopenia and thrombocytopenia and a high mortality rate. The best survival data were obtained in rabbits who were treated with both penicillin and polymyxin. The data suggests that polymyxin B is effective in neutralizing the endotoxin effects from live organisms and that the timing of polymyxin treatment is of critical importance.

759 DISTURBANCES OF GRANULOPOIESIS IN CONGENITAL CYTOMEGALOVIRUS (CMV) INFECTION. William M. Crist, Sergio Stagno, Hernan Moreno, Caroline Feist. The University of Alabama School of Medicine and The Children's Hospital, Birmingham, Alabama.

Two infants with severe congenital CMV infection were studied using the in vitro soft agar culture technique. Both infants had atypical lymphocytes and white blood cell counts were $13.5 \times 10^3/mm^3$ and $7.7 \times 10^3/mm^3$. CMV was grown directly from the neutrophils of Ficoll-hypaque separated peripheral white blood cells (P.B.) of patient #1. P.B. colony forming cells (CFC) were dramatically increased in both patients (means of 366.25 and $22.66/5 \times 10^5$ cells plated respectively) and bone marrow (B.M.) CFC was also increased in patient #1 (mean of 161.75 col/10^5 cells plated). It was not possible to assay colony stimulating activity (CSA) from patient #1 because when his P.B. nucleated cells were plated in underlayers they overgrew the plates with myeloid colonies without an exogenous source of CSA. Patient sera (0.3cc) mixed with 1cc of control B.M. cells (10^5 cells/cc) produced stimulation of CFC (mean of 42.25 col/10^5 cells plated as compared to a mean of 20.27 col/10^5 cells when plated without serum).

These results suggest that CMV is capable of producing marked increases in myeloid stem cell numbers. A shift of these cells from their usual location in the B.M. to the P.B. occurs. No disturbances in myeloid maturation were noted in vivo or in vitro. These findings are not predictable from the total white cell counts or differential counts and make one wonder about the relationship of the "atypical" lymphocyte to the myeloid stem cell and the oncogenic potential of CMV.

760 LETHAL VIRUS-EMULSIFIER/SOLVENT INTERACTION: IN VIVO AND IN VITRO STUDIES. John F. Crocker, Rudolph L. Ozere, Spencer H. Lee, Sharon C. Digout, Kenneth R. Rozee, Otto Hutzinger and Stephen H. Safe. Departments of Pediatrics and Microbiology, Dalhousie University, Halifax, Nova Scotia; Departments of Chemistry, University of Amsterdam, The Netherlands and University of Guelph, Ontario.

Chemical emulsifiers and solvents are widely used in industrial compounds as dispersal or wetting agents. These compounds, which include insecticide spray formulations, are diverse alkylated aromatic molecules largely derived from petroleum oil by-products. Previous experiments (Science, 192, pp. 1351-1353, 1976) have indicated increased lethality of EMC virus-infected young mice pre-exposed to several of these compounds. Further experiments with young mice using the emulsifiers Toximul, and Atlox, and the solvent Aerotex, have shown each enhances, to varying degrees, the lethality of EMC in suckling mice.

Similarly various tissue culture systems (Hela, L-929, VERO, and secondary human kidney cells) were pretreated with subtoxic concentrations of the chemicals (0.01-10 ppm) and subsequently infected with appropriate viruses (VSV, EMC, Polio Type I). The results indicate that these chemicals significantly potentiate the plaquing efficiency of the culture systems.

The potentiating effect of these chemicals on certain viral infections has thus been demonstrated both in vivo and vitro.

The manner in which these complex chemicals alter a host's reaction to a virus may be important in the pathogenesis of such conditions as Reye's syndrome.

761 VENTRICULAR INVOLVEMENT IN HAEMOPHILUS INFLUENZAE TYPE B (HIB) MENINGITIS. Robert S. Daum, David W. Scheifele, Vassiliki Syriopoulou and Arnold L. Smith, Children's Hospital Medical Center, Dept. of Med., Boston, Mass.

A primate model of HIB meningitis allows systematic investigation into all aspects of this common disease. 19 infant monkeys were inoculated intranasally with 10^8 HIB. Bacteremia occurred after nasal colonization in 17/19 animals (89%). 48 hrs after the onset of bacteremia (range 24-96 hrs), 16/17 (94%) animals developed meningitis (lumbar or cisternal CSF containing bacteria and inflammatory cells). To ascertain ventricular involvement, we performed 17 lateral ventricular punctures on 8 meningitic animals, sampling freely flowing CSF. A mean of 3.9 days (range 0-10) had elapsed between onset of documented meningitis and the ventricular tap. HIB were cultured from all ventricular CSF samples (17/17)(100%). In 11/12 quantitative comparisons of bacterial density in ventricular and cisternal fluids, the values were within 1 log; 4/6 quantitative ventricular-lumbar comparisons were within 1 log. These similarities were observed over a wide range of bacterial densities (10^2 - 10^8). When discordance was present, the ventricular CSF contained more bacteria.

In 11/16 comparisons of number of CSF leukocytes in ventricular and cisternal fluid, the ventricular pleocytosis was lower (mean ratio 0.04; range 0.0 - 0.22). However in 5/16 there was no differences in cellular inflammatory response (mean ratio 1.04; range 0.89 - 1.36). Glucose concentrations were not different in 5 ventricular-cisternal comparisons. We conclude infection of ventricular CSF is a uniform feature of HIB meningitis.

762 GROUP B STREP (GBS) COLONIZATION ASSOCIATED WITH INTRAUTERINE PRESSURE TRANSDUCERS(IPT). Jeffrey P Davis, Laura T Gutman, Mary V. Higgins, Catherine M Wilfert, Selman I Welt. Duke Univ. Med. Ctr., Dept. Ped. & Ob., Durham.

GBS colonization in a newborn nursery increased from 1-3/100 in period A(4/4-6/26/76) to 5/100 in period B(6/27-7/24) to 8 to 9/100 in period C(7/25-10/16). The rate the previous year was 1.4/100. On 10/11 cultures of fluid in the domes of 2 of 4 IPT yielded GBS. When IPT are inserted, the intrauterine contents are contiguous with the transducer dome via a column of fluid. The maternal ends, which were routinely detached from the dome and autoclaved between use, were sterile. Routine sterilization of transducer domes after maternal use began 10/12 and infant colonization declined to <2/100 in the subsequent 4 week interval.

Infant colonization in relation to maternal monitoring for periods B & C were analyzed. 111/393 (28.2%) mothers were exposed to IPT and 282 (61.8%) were not. GBS colonization of infants delivered to non-IPT monitored mothers did not differ for periods B & C. By period C use of IPT increased. In period C 13/87 infants born to IPT monitored mothers and 12/201 infants born to non-IPT monitored mothers harbored GBS ($.01<P<.02$). For infants born to IPT monitored mothers in period C rates of colonization (13/87) were significantly greater than in period B (0/24) ($p<.0003$). Contaminated IPT used during labor were a nosocomial source of GBS and may contribute to the prevalence of GBS. This experience provides another example of the infectious hazards of pressure transducers if sterilization of the external but biologically contiguous diaphragmatic component does not occur.