†1075 IgE ANTI-RSV SECRETORY IMMUNE RESPONSE IN INFANTS TREATED WITH RIBAVIRIN AEROSOL. Kira Ciardullo-Geraci, Ingrid Rosner, Paul Palumbo, Oscar Laskin, Margaret Spinelli and Paul J Edelson, Cornell Univ. Med. Coll.-NY Hospital, Depts. of Pediatrics & Medicine, New York, NY.

Twenty-two hospitalized infants with documented RSV lower respiratory tract infection were enrolled in a double-blind placebo-controlled drug efficacy study of the antiviral agent, Ribavirin. Fifteen infants were evaluated for production of specific IgE-RSV in nasopharyngeal secretions at time of admission and at regular intervals during convalescence, up to four months beyond initial presentation. Seven infants were treated with aerosolized Ribavirin for a mean duration of 3.14 days. They ranged in age from 1 mo-12 mos.(median 3 mos) with a male:female ratio of 3:4. Eight infants, during 9 episodes of illness received placebo for mean duration of 5.88 days. They ranged in age from 1 - 24 mos. (median 3.5 mos) with male:female ratio of 6:2. Atopic family history was positive in 6 of 7 patients treated with drug(85%) as compared to 3/8 in placebo group(38%).One patient in treated group, two in placebo presented with bronchiolitis. RSV infection was documented by indirect immunofluorescent assay for antigen and/or culture positivity. IgE-RSV titers in secretions were quantitated by an ELISA technique. Criteria for a significant response was IgE-RSV titer of 8 or greater by 4 months after initial infection. In the seven treated patients, only two had a significant rise in IgE titer. In contrast, 7 of 8 untreated patients had a significant titer rise. As calculated with the Fisher Exact test, this significant at a p value of 0.033.

†1076 ROTAVIRUSES (RV) OF BOVINE AND HUMAN ORIGIN: IMMUNE RESPONSE OF ADULTS AND CHILDREN FOLLOWING ORAL ADMINISTRATION. F Clark, P Offit, K Dolan, T Furukawa, L Bell, and S Plotkin, Wistar Inst. & Children's Hospital, Phila. PA

Vaccination against human RV is justified by their prevalence throughout the world as the major viral cause of infantile diarrhea and dehydration. Experimental evidence has shown that only antibody at the mucosal surface of the gut protects animals against rotavirus disease. Attempts at immune prophylaxis have centered on live viruses given per os.

We have orally administered two bovine RV and two human RV to volunteers. Bovine virus NCDV was administered to 10 adults; 6 exhibited a serum antibody response. A low passage bovine RV, strain WC3 isolated in this laboratory and administered in a dose of $10^{7.0}$ pfu, elicited an immune response in 1 of 5 adults. WC3 virus (10^{7} pfu) has been given to 16 children aged 1 to 6 years with no untoward effect. Of 12 children without pre-existing SN antibody to bovine rotavirus, 11 exhibited an increase in SN antibody. In contrast to published results with NCDV vaccine, this SN antibody response was broadly cross-reactive with human RV of serotypes 1 and 3.

A human RV isolate (WI-61), presumptively identified as serotype 1, given to adult volunteers in varying doses, elicited a predominantly ELISA antibody response in 3 of 7. Human isolate WI-78 (serotype 3) induced an ELISA antibody response in each of 5 volunteers, including those given doses as low as 10^{3} pfu. Tissue culture grown RV are immunogenic p.o. and may be broadly protective.

1077 NONTUBERCULOUS MYCOBACTERIAL (NTM) PULMONARY DISEASE IN CHILDHOOD - AN EXPANDED SPECTRUM BASED UPON DIFFERENTIAL SKIN TEST REACTIVITY. Daniel L. Cohen, Andrew M. Margileth, Dept. of Pediatrics, USUHS, Bethesda, MD.

Confirmed pulmonary infection by NTM is rare in childhood. Classically the diagnosis has been based upon cultures from children with findings of pulmonary disease. Differential skin testing using a panel of NTM antigens and PPD-T has been shown to be useful in the diagnosis of NTM lymphadenopathy and may be helpful in childhood pulmonary disease. We are reporting 13 patients in whom NTM pulmonary disease was likely. Three culture positive patients (5 mos,9 mos,5 yrs) presented with brief febrile illnesses and chest x-rays revealing infiltrates and adenopathy. Ten patients were diagnosed by differential skin testing (2 1/2 yr-18 yr). Cultures were either negative or not done. These patients had a more indolent disease with hilar adenopathy (8/10) or infiltrates (4/10) on chest x-ray. Some were asymptomatic. Differential skin testing in all instances has shown a > 5 mm difference in induration between NTM antigens and PPD-T. Three culture (+)/skin test (+) patients and 4/10 culture [(-) or N.D.]/skin test (+) patients received antituberculous treatment of variable duration. All patients are alive and well 1-7 yrs from diagnosis and differential skin testing has continued to reveal greater induration to one or more NTM antigens than to PPD-T. There is an expanded spectrum of NTM pulmonary disease in childhood which encompasses asymptomatic pts, acutely ill pts, and patients with chronic symptoms. It would appear that differential PPD skin testing is a useful adjunct to diagnosis in patients with hilar adenopathy and/or pulmonary infiltrates.

1078 FACTORS ASSOCIATED WITH ELEVATED SERUM CONCENTRATIONS OF CHLORAMPHENICOL (CAP) IN CHILDREN. Beverly L. Connelly, Christopher J. Harrison, University of Cincinnati, Children's Hosp. Med. Ctr., Department of Pediatrics, Cincinnati.

Recently the recommended pediatric dosage for IV chloramphenicol has been lowered from 100 mg/kg/day to 75-80 mg/kg/day. Because of variable kinetics in children, monitoring of serum levels of free CAP is recommended to avoid the dose related toxicities, bone marrow supression occurring with serum levels of >25 µg/ml and the potentially fatal "gray syndrome" reported with levels of 40-200 µg/ml.

During a 20 month period, 592 patients had serum CAP levels measured by HPLC. 54 patients had 1 or more levels $\geq$ 30 µg/ml, 18/54 had levels $\geq$40 µg/ml. Only 1 of the patients with evaluable charts (41/54) exhibited pre-existing liver disease (Reye Syndrome). 14/41 patients (34.1%) with levels $\geq$ 30 µg/ml received a daily CAP dose $\geq$ 80 mg/kg. Of the remaining 27 patients, 12 (28.5%) were < 6 months of age, and 16 (38%) had pre-existing systemic acidosis ($CO_2 \leq 15$ mEq/l and/or base deficit $\geq$ 5). Four (9.5%) exhibited none of these three criteria. No correlation could be determined between CAP levels > 30 µg/ml and sex, race, admitting diagnosis, or concurrent drug administration.

Six patients (14.6%) had more than one risk factor and a higher mean serum CAP level (53.2 µg/ml) than patients with one risk factor (40.8 µg/ml).

Risk factors for development of toxic serum concentrations of CAP in children include: 1) dose > 80 mg/kg/day; 2) pre-existing acidemia and/or hypotension; and 3) patient age < 6 months. Early frequent monitoring of serum CAP levels should avoid serious toxicities.

1079 CHRONIC PRODUCTIVE HERPESVIRUS INFECTION IS ASSOCIATED WITH INSUFFICIENT VIRUS-SPECIFIC CYTOTOXIC CELL-MEDIATED IMMUNE RESPONSE. Beverly L. Connelly, and Christopher J. Harrison. University of Cincinnati, Children's Hosp. Med. Ctr., Dept. Pediatrics, Cincinnati.

The systematic study of the pathogenesis of human herpesvirus has been possible using guinea pig (GP) models. GP cytomegalovirus (CMV) infection results in a limited (approx. 12 wks) productive infection; while GP herpes-like-virus (HLV), recently proposed as a model for human Epstein Bar Virus, results in prolonged indefinite productive infection. In humans, cessation of productive CMV infection has been associated with CMV-specific cell-mediated immune function (CMI).

^{51}Cr release assays were developed for natural killer (NK) activity and memory dependent genetically restricted cellular cytotoxicity (MRCC) to HLV and CMV using a 12 hr assay and an effector:target ratio of 100:1. Animals with (+) and without (-) chronic HLV or CMV infections were studied. Six animals (HLV+/CMV-) showed minimal NK activity (4%) or MRCC (4%) against HLV infected targets, however, NK activity (20%) was present for CMV targets. Three animals (HLV-/CMV+) showed NK activity (9%) but no MRCC ($\leq$3%) against HLV targets as well as NK activity (26%) and MRCC (9%) to CMV targets. Three animals (HLV-/CMV-) showed NK activity and no MRCC to HLV (9% and $\leq$3%) or CMV (19% and $\leq$ 3%) targets. Two animals (HLV+/CMV+) exhibited both NK activity and MRCC to HLV (7% and 7%) and CMV (39% and 8%) targets.

HLV is not globally immunosuppressive since CM V specific NK activity and MRCC are present in HLV+/CMV+ animals. Preliminary data suggest that chronic productive HLV infection may be due to insufficient HLV specific cytotoxic CMI (NK activity or MRCC).

1080 NASOPHARYNGEAL COLONIZATION OF CHLAMYDIA & MYCOPLASMA IN INFANTS ADMITTED TO NEONATAL INTENSIVE CARE UNIT. A PRELIMINARY REPORT. R. Cooper, H.C. Tien A. Baldomero, S. Sun (Spon. R. Rapkin) UMD-NJ Med. Sch. Children's Hosp. of NJ, Dept. of Neonatology, Newark, N.J.

Recent studies on onset of labor indicate that phospholipase A_2, an enzyme released in the amniotic membrane, stimulates contractions. Organisms that infect female genital tract such as chlamydia and mycoplasma have been found to release phospholipase A_2. To determine if these two groups of organisms are related to 1, premature labor and 2, respiratory infection, we began culturing nasopharynx of all preterm infants and infants with respiratory distress who were admitted to NICU during a 5 month period. Cultures were taken from oropharynx during the first 3 days of life. Cultures were positive in 9 out of 45 patients (20%), 8 grew chlamydia and 1 ureaplasma urealyticum. The birthweight of 5 were under 2000 gm and 4 were over 2000 gm . Nineteen percent of preterm infants (BW <2000 gm) and 27% of infants with RDS (>2000 gm) were colonized. Comparative analysis of associated risk factors of 9 colonized and 36 uncolonized infants revealed a significantly higher maternal history of previous premature birth and fetal loss in colonized group. Our preliminary results indicate a high nasopharyngeal colonization of chlamydia in both preterm infants and larger infants with respiratory symptoms. However, whether maternal vaginal colonization of chlamydia is associated with premature birth or neonatal colonization contributes in part to respiratory distress remain speculative, and must be comfirmed by additional studies.