1051 Efficacy and Safety of Imipenem in Childhood. G Alpert, R Dagan, E Connor, JM Campos, KR Powel, SA Plotkin. U of Penna. and Univ. of Rochester.

Imipenem, a very broad spectrum antimicrobial drug was given to 40 children ranging in age from 3 months to 13 years (median 2 years). Children younger than 3 years received 100 mg/kg/day and children older than 3 years received 60 mg/kg/day. 29 organisms were isolated from 26 patients. Infections included 11 cellulitis, 4 osteomyelitis, 4 septic arthritis, 2 lymphadenitis, 2 renal infections, 2 wound infections, and 1 pneumonia. Organisms included 8 S. aureus, 7 S. pyogenes, 7 H. influenza b, 3 P. aeruginosa, 2 S. pneumonia, 1 E. coli, 1 S. enteritides.

6 patients were bacteremic (5 H. influenza, 1 S. pneumonia). Patients were treated for 2 to 14 days (mean 6 days). All responded favorably with sterilization of the infected site, defervescence and improvement in the local findings. All the organisms were susceptible to imipenem, and none developed resistance. There were no superinfections. 40 patients were analyzed for tolerance and safety. Imipenem was well tolerated and there were no significant side effects. Transient side effects noted were: irritation of iv site (3), diarrhea (2), SGOT elevation (2), leukopenia (1).

†1052 Rapid detection of human cytomegalovirus. G Alpert, SA Plotkin, University of Pennsylvania.

We detected the presence of CMV in urine using MRC-5 cells inoculated by low speed centrifugation and stained in a bridged indirect avidin biotin fluorescent stain using E13, a commercially available monoclonal antibody that detects an immediate early nuclear antigen. Of 88 specimens, 37 were positive for CMV either by culturing (31 specimens) or by the rapid detection method (36 specimens). Comparison of the methods is presented in the table.

	Fluorescence Positive		Fluorescence Negative	
	With Centrifugation	Without	With Centrifugation	Without
culture +	30	19	1	12
culture -	6	1	51	56

97% of the culture positive specimens were detected by the rapid detection method within 24 hours. The mean length of incubation to appearance of CPE was 18 days. 15 specimens had a titer of 1×10^1 pfu/ml or less; 3 had $\leq 10^2$ pfu/ml; 2 had $\leq 10^3$ pfu/ml, 1 had $\leq 10^4$ pfu/ml and 2 had $> 10^4$ pfu/ml. The 6 "false positive" specimens belong to 5 patients known to be seropositive for CMV. 2 of the patients had a urine specimen positive for CMV on culture 2 weeks later, and 1 had a throat wash positive in culture for CMV at the same day that the urine was tested. Our method is simple, rapid, and is as sensitive as a tissue culture for determination of CMV.

1053 GESTATIONAL VARICELLA ZOSTER VIRUS (VZV) INFECTION IN GUINEA PIGS. Sherman J. Alter and Martin G. Myers, University of Cincinnati, Children's Hosp. Med. Ctr., Department of Pediatrics, Cincinnati.

Although uncommon, gestational varicella has potential for severe consequences. Fetal wastage and congenital anomalies have been associated with early gestation maternal infection while progressive neonatal disease has been associated with perinatal infection.

To study congenital infection, strain 2 guinea pigs, known to be successful breeders for ≤ 3 pregnancies, were either infected with 4.2 $\log_{10}$ pfu VZV or sham inoculated at 23-57 days gestation. Five infected pregnancies resulted in the spontaneous death of all offspring; one with maternal death, one with in utero resorption, one with a stillborn litter, and two litters with death of all offspring between 4-15 days of age. Three additional pregnancies progressed to full-term delivery. Of 26 total offspring, 11 were stillborn, three died in utero, and six died in the neonatal period; three had congenital cataracts. Eight of 29 pups born to sham inoculated animals were stillborn. An additional animal, infected at five weeks gestation, was sacrificed six days after inoculation: VZV was detected by explant co-cultivation or dot blot DNA hybridization from multiple maternal and fetal tissues.

Gestational VZV infection in the guinea pig causes fetal wastage, altered intrauterine development, and increased perinatal mortality.

1054 COAGULASE-NEGATIVE STAPHYLOCOCCUS (CNS) BACTEREMIA IN THE NEONATE. Endla K. Anday, George H. Talbot, & Maggie Doorley (Spon. by Maria Delivoria-Papadopoulos). University of Pennsylvania School of Medicine, Departments of Pediatrics and Infectious Diseases, Phila., PA. 19104

CNS is being reported with greater frequency in neonatal disease. A case-controlled study to determine the incidence and risk factors associated with CNS bacteremia, was conducted from 1/82 -9/84 at the Hosp. of the Univ. of PA. A total of 57 nosocomial bacteremias were detected with 42 (74%) due to CNS, an incidence of 5.4/1000 live births. Mean age of onset was 26 days (range, 7-100 days). All infants with CNS had signs and symptoms of sepsis with recurrent bradycardia and pallor or cyanosis. Recurrent apnea, temperature instability, and feeding intolerance occurred in >70% of the infants. The most frequent hematologic abnormality was an immature/total neutrophil count >0.2 (45%). A comparison of CNS to randomly selected Controls (numbers are mean ± SD; *P= < 0.01, **P= < 0.001) revealed:

	BW (kg)	GA (wks)	CVL (days)	TPN (days)	IMV (days)	WBC ($x10^3/mm^3$)
CNS	1.017	28.2	15.6**	26.9**	41.4**	15.5**
n=42	±0.424	± 2.2	±19.1	±16.8	±45.4	±7.39
Control	1.087	29.1	3.0	10.2	13.8	11.2
n=85	±0.334	± 2.3	± 3.3	±11.3	±18.3	± 3.8

In comparing the CNS to Controls, there was a higher incidence of males, 72 vs 45%,* bronchopulmonary dysplasia, 50 vs 21%,** and necrotizing enterocolitis, 39 vs 14%*, respectively.

This study indicates that low birth weight infants with chronic lung disease requiring multiple supportive measures are at highest risk for CNS bacteremia.

†1055 PROTEIN-OLIGOSACCHARIDE CONJUGATE VACCINE PRIMES INFANTS FOR A MATURE ANTIBODY (Ab) RESPONSE TO THE CAPSULAR POLYSACCHARIDE (PRP) OF HAEMOPHILUS INFLUENZAE TYPE B (HIB). Porter W. Anderson, Michael E. Pichichero (Spon.by R. Insel). Univ Rochester, Dept Peds, Rochester, New York.

Ab to PRP are protective against systemic infections by Hib, but infants under 18 mo usually have an inadequate Ab response to PRP vaccine. To circumvent this unresponsiveness, we conjugated oligosaccharides of PRP to a protein carrier, CRM197, a nontoxic version of diphtheria toxin. Infants were injected with the conjugate at ages 2, 4, and 6 mo. At age 9 mo the geometric mean titer (GMT) of anti-PRP Ab in a group of 5 such infants was 2.0 µg/ml; the response included IgG Ab. In an unvaccinated control group of 13 infants the GMT was 0.015 µg/ml, with no IgG included. Both groups were then vaccinated with PRP vaccine, and the anti-PRP Ab was measured 1 mo later. In the control group, 3/13 infants had a rise, and the GMT rose to 0.024 µg/ml. In the group primed with conjugate, 4/5 had a rise, and the GMT rose to 7.2 µg/ml. Thus the conjugate is able not only to raise the Ab to high levels, but also to prime for an enhanced response to the polymer. It seems likely that such a response would occur also when the infant encounters Hib. Further, boosting with PRP after priming with conjugate may maintain the Ab at an elevated level.

LEAVE **●1056** ADVANCES WITH THE VARICELLA VACCINE: A TRIAL OF THE TETRAVALENT VACCINE (MMRV) AND A POST EXPOSURE PROPHYLAXIS STUDY. A.M. Arbeter, S.E. Starr, L. Baker, R. Casey, S.A. Plotkin; Albert Einstein Medical Center and The Children's Hospital, Philadelphia, Pennsylvania.

A combination varicella, measles, mumps, and rubella vaccine was tested in 17 healthy children aged 15-18 months. The seroconversion rates were 100% for varicella (FAMA), 100% for measles (Micro HI), 93.7% for mumps (EIA) and 100% for rubella (FIAX). In addition, 3/4 vaccinees who were low titer seropositive on day 0 for anti-varicella antibody had a ≥ 4 fold increase in titer. Rashes occurred in 7/17, 5 morbilliform and 2 had rashes similar to varicella vaccine rashes as previously described. None had vesicular eruption. Three children had temperature above 38.3°C, 2 with morbilliform rashes, 1 with varicella vaccine like rash.

In another study, the varicella vaccine was administered in a double blind placebo controlled trial of post exposure prophylaxis. Within 5 days of a sibling household exposure, 13 children received vaccine and 13 children received placebo. Twelve of 13 placebo recipients developed varicella (60-600 lesions) while 4 of 13 vaccinees developed mild varicella (2-50 lesions). Three of 4 vaccinees who developed mild varicella were immunized > 3 days after exposure. The protective efficacy was 67%, $p < 0.003$; protection plus modification efficacy was 100%, $p < 0.000003$.

These data indicate that the varicella vaccine is immunogenic in combination with the MMR and is successful when given separately for post exposure prophylaxis.