MATERNAL-FETAL TRANSFER OF CEFAZOLIN. Betty Bernard, Lorayne Barton, Michaeline Abate, Charles Ballard, and Paul Wehrle. Dept. of Pediatrics, LAC-USC Medical Center, Los Angeles.

To investigate the maternal-fetal transfer of Cefazolin, (CEZ), a new antibiotic, and its distribution in the fetus, a single 14 mg/kg I.M. dose was administered to 41 gravidas (18-1st trimester, 23-2nd trimester) ¼ to 68½ hours prior to therapeutic abortion and sterilization by hysterectomy. CEZ concentration was assayed microbiologically in maternal serum, myometrium, placenta, fetal tissues (brain, lung, liver and kidney) and fetal fluids (amniotic, CSF, urine and serum). Maternal serum half-life of CEZ was 2.2 hours with a peak serum concentration of 63 ug/ml at T_0. Half-life and maximum CEZ concentrations were 3.2 hours and 0.16 ug/ml for placenta, 3.9 hours and 7.5 ug/ml for cord blood, and 9.4 hours and 0.8 ug/ml for amniotic fluid. CEZ was not detected in fetal CSF, brain, kidney, lung or liver. CEZ was minimally (< 1 ug/ml) detected in fetal urine from 2 to 12 hours. Only three myometrial samples between ¼ and 1 3/4 hours had minimal CEZ concentrations. There were no differences in CEZ concentrations noted in any tissues or fluids with increasing weeks' gestation.

No accumulation of CEZ was demonstrated in the fetus. Fetal serum concentrations were 5 to 10% of the maternal serum and in the MIC range of susceptible organisms.

PARAINFLUENZA VIRUS EPIDEMIOLOGY. Carl D. Brandt, Hyun W. Kim, Robert M. Chanock, Robert H. Parrott. George Washington University and Research Foundation of Children's Hospital, Washington, D.C. 20009

Between October 1957 and June 1972, a parainfluenza virus was isolated from 8.3% of 6,400 hospitalized respiratory disease patients, from 8.3% of 10,000 respiratory disease outpatients, and from 0.7% of 8,800 control subjects who were free of respiratory disease. A total of 548 type 1, 234 type 2, 593 type 3, 45 type 4A and 18 type 4B infections were demonstrated by virus recovery. At least one respiratory disease patient yielded a parainfluenza virus during 174 of the 177 consecutive months of study; parainfluenza 1 virus was recovered during 110 of these months, while parainfluenza 2, 3 and 4 viruses were recovered in 58, 144 and 34 months respectively. Parainfluenza 1 virus tended to be most active in even-numbered years, while parainfluenza 2 and 3 viruses usually were most active in odd-numbered years. Overall, the peak activity of parainfluenza 1 and 2 viruses occurred in October, while parainfluenza 3 virus was most active in June and November. Based on virus recovery and/or complement-fixation seroresponse, 41.4% of hospitalized croup patients and 17.9% of all hospitalized respiratory patients showed evidence of parainfluenza virus infection. The parainfluenza viruses as a group apparently rank second only to respiratory syncytial virus as a cause of respiratory disease, particularly serious respiratory disease, in our study population of infants and young children.

SIGNIFICANCE OF PYOCINE TYPING IN CHRONIC PULMONARY DISEASE Bernard Boxerbaum, Antoinette Iannetta, Carl F. Doershuk, Thomas F. Boat, Robert C. Stern, and LeRoy W. Matthews. Case Western Reserve University School of Medicine, Rainbow Babies and Childrens Hospital, Department of Pediatrics, Cleveland.

While pulmonary infection in cystic fibrosis (CF) is most often initially due to S.aureus, P.aeruginosa often emerges as the major pathogen. The latter may be typed by susceptibility to pyocines, antibacterial substances produced by certain P.aeruginosa and active only against certain other P.aeruginosa. To understand the role of this organism in the bacterial ecology of the respiratory tract, pyocine typing, utilizing NIH indicator strains, was performed on multiple P.aeruginosa isolates from 100 chronic pulmonary disease patients with and without CF, classified according to clinical condition. No specific types were characteristic of non-CF patients, but N-7, N-9, N-11, N-13, and N-27 were most common to CF patients. Types N-7 and N-11 were found most frequently in those with severe impairment or exacerbation of pulmonary disease, while N-1 and/or N-4 was associated with improvement. Of CF patients in good clinical condition, 33% had N-1 and/or N-4, compared to only 15% of CF patients with severe impairment. Pyocines produced by N-1 and N-4 P.aeruginosa in vitro inhibit N-7 and N-11, but pyocines produced by N-7, N-9, N-11, N-13, and N-27 do not inhibit N-1 and N-4. It is concluded, therefore, that the presence of N-1 and/or N-4 P.aeruginosa may inhibit colonization by P.aeruginosa characteristic of more severe disease as can occur among staphylococci in other clinical conditions.

CLINDAMYCIN EFFECTIVE IN THERAPY OF STREPTOCOCCAL PHARYNGITIS. William J. Chernack, Grace Leidy, Russell S. Asnes, Burton Grebin, Katherine Sprunt. Columbia College of Physicians and Surgeons, Babies Hospital, Dept. Ped., N.Y.C.

Benzathine penicillin (BP) is considered to be the most effective therapy for removal of Streptococcus (S.) pyogenes from the pharynx. The following study was undertaken to determine whether oral clindamycin (CL) was equally effective for this purpose. This possibility was suggested by published observations made in private practice in which CL was compared with other oral antibiotics.

939 clinic patients with throat cultures positive for S. pyogenes were randomly selected for treatment with intramuscular BP, oral CL or oral phenoxymethyl penicillin (PMP). 621 returned for a follow-up culture and brief history on at least one scheduled visit. 307 returned for all scheduled visits at 1, 2, and 4 weeks after initiation of therapy.

Data from the first 2 follow-up cultures indicate that CL and BP had similar failure rates (8% and 9% resp.) and that PMP was less efficacious than either of the other 2 antibiotics ($p<.01$). Late cultures indicate that CL is not as efficient as BP or PMP in preventing recurrences. This latter finding differs from all others in the literature, is not due to age, sex, weight, quantity of S. pyogenes in original culture or dosage of CL, and is unexplained.

Oral CL is effective in removing S. pyogenes from the pharynx and may be as effective as BP.

EPIDEMIC GASTROENTERITIS DUE TO E. COLI 0 142. K.M.Boyer, N.J.Petersen, I.Farzaneh, C.P.Pattison, and M.C.Hart. Phoenix Laboratories, Center for Disease Control, and Maricopa County General Hospital, Dept. of Pediatrics, Phoenix. (Introduced by W.J.R.Daily.)

Between June, 1972 and March, 1973, an epidemic of idiopathic gastroenteritis affected 59 infants in the nursery of this hospital. Microbiological evidence obtained by prevalence surveys established an enterotoxigenic E. coli 0142/K86/H6 as the etiology of the outbreak. Clinical illness frequently was severe, resulting in 4 deaths and in intractable diarrhea in an additional 17 babies. Attack rates were found to be highest for low-birth-weight infants during the first two weeks of life. No predisposition was found to be associated with prior antibiotic therapy, gavage feeding, oxygen therapy, or birth by Caesarian section. Environmental microbiologic data incriminated the hands of personnel as potential transmission vehicles; hand carriage of the epidemic strain was not decreased by intensive handwashing with 3% hexachlorophene soap. Parenteral antibiotic treatment of affected babies was found to be associated with protracted illness, while oral colistin therapy successfully limited the course of diarrhea in all treated infants. Neonatal infection by an enteropathogenic bacterium not identified by traditional techniques and the resultant inappropriate use of parenteral antibiotic therapy are shown to be important causative factors in "idiopathic intractable diarrhea of infancy."

COMPARATIVE FINDINGS IN 666 CHILDREN VACCINATED SUBCUTANEOUSLY (subc.) OR PERCUTANEOUSLY (perc.) WITH ATTENUATED CV1-78 (CV1) OR STANDARD CALF LYMPH (CL) SMALLPOX VACCINES. James D. Cherry, Ursula T. Rolfe, James D. Connor, John E. Schanberger, Kenneth McIntosh, Abram S. Benenson, David W. Alling, George J. Galasso, and Martha J. Matthews. St. Louis Univ., UCLA, UC San Diego, Univ. Colo. Med. Schs., Depts. Ped., St. Louis, Los Angeles, San Diego and Denver; Univ. Ky. Col. Med.; Dept. Comm. Med., Lexington; and NIAID, NIH, Bethesda.

The present study was undertaken in an attempt to find a method to reduce smallpox immunization morbidity. Following perc. vaccination CL recipients were more likely to have a vesicular reaction (VR) than CV1 recipients. In perc. vaccinees with VR and in subc. vaccinees, CL recipients more frequently developed post-vaccination neutralizing (neut.) and hemagglutination-inhibiting (HI) antibodies than CV1 recipients. Six months after primary vaccination, subjects were revaccinated perc. with CL vaccine. Of 105 initial perc. CL vaccinees with VR and HI antibody, 96% had neut. antibody following revaccination; in contrast, only 69% of similar initial CV1 recipients had post-revaccination neut. antibody. Of 107 initial subc. CL vaccinees with HI antibody, only 66% had neut. antibody following revaccination; 47% of similar subc. CV1 vaccinees had post-revaccination neut. antibody. If neut. antibodies are important in resistance to smallpox, the results of this study suggest that primary subc. administration of either CL or CV1 or perc. administration of CV1 would be unsatisfactory alternatives to standard smallpox vaccination.