781 IN VITRO ACTIVITY OF COMBINATIONS AMINOGLYCOSIDES AND PENICILLINS AGAINST GROUP B STREPTOCOCCI. R.E. Keeney, M.D. Cooper, S. Lyons and E. Cheatle. (Spon. by J. Garfunkel). Southern Illinois University School of Medicine, Departments of Medical Sciences and Pediatrics.

In recent years group B streptococci (GBS) have become one of the most common etiologic agents in neonatal infections. In vitro studies indicate that GBS are susceptible to concentrations of penicillin and ampicillin readily achievable in serum. However, fatality rates, often in excess of 50%, occur despite antibiotic therapy. Ampicillin (AMP), penicillin G (Pen G), tobramycin (TOB), kanamycin (KAN), gentamicin (GEN), and amikacin (AMI) were evaluated for their in vitro activity against GBS. Checkerboard titrations of the combination of aminoglycoside and penicillin or ampicillin were performed. Ninety percent of the fifteen isolates tested showed indifference to the aminoglycoside-ampicillin combination, whereas ten percent had an additive effect. Eighty percent of the isolates showed indifference to the aminoglycoside-penicillin combination, with twenty percent having an additive effect. No synergy or antagonism was found using the various aminoglycosides with either penicillin or ampicillin. Although synergy was not demonstrated, it appears that initial empiric combination antibiotic therapy in infants suspected of having sepsis should not compromise the outcome of those with GBS sepsis.

782 PSEUDOMONAS CEPACIA IN THE RESPIRATORY FLORA OF PATIENTS WITH CYSTIC FIBROSIS (CF). Lourdes R. Laraya-Cuasay, Mark Lipstein and Nancy N. Huang. Temple Univ. Sch. of Med., Dept. of Pediatrics, St. Christopher's Hospital for Children, Philadelphia, PA

Of 6364 respiratory tract cultures obtained from patients with CF from July 1973 to December 1976, 402 grew Pseudomonas(Ps.) cepacia. In 208 cultures, it was the single isolate, and in 194 it grew together with Staphylococcus aureus and/or Ps. aeruginosa, or together with other gram-negative organisms. A total of 54 patients, (2½ to 22 years), 32 females and 22 males, with mild (2), moderate(15) and advanced(37) degrees of CF has Ps. cepacia isolated from bronchial or sputum cultures. Ps. cepacia has been found in patients who have never been hospitalized and in those who rarely used aerosol therapy. It was recovered consistently for 2 to 3 years from 17 patients. Nine females and 5 males have died from respiratory failure. Premortem cultures in 12 patients grew Ps. cepacia alone or together with Ps. aeruginosa. In 10 autopsied cases, the lung culture grew Ps. cepacia alone in 3 and Ps. aeruginosa in 4. Ps. cepacia is resistant to almost all antimicrobials including nalidixic acid and gantrisin but a few are sensitive to chloramphenicol, trimethoprim-sulfamethoxazole (TMP-SXT) and kanamycin. Good clinical response has been observed in those treated with TMP-SXT or chloramphenicol. Transient disappearance of Ps. cepacia in post-therapy cultures has been achieved in a few cases. The significance of this finding is under study. The superinfection with Ps. cepacia of patients with CF with advanced disease has made the antimicrobial therapy more difficult.

783 TEICHOIC ACID SEROLOGY IN VARIOUS STAPHYLOCOCCAL COAGULASE POSITIVE INFECTIONS IN INFANTS AND CHILDREN. Chinh T. Le and Edward B. Lewin (Spon. by Martin R. Klemperer). Univ. of Rochester Sch. of Med. and Dent., Strong Memorial Hospital, Department of Pediatrics, Rochester, N.Y.

Counterimmunoelectrophoresis (CIE) and Ouchterlony gel diffusion were used for the detection and titration of antibodies to staphylococcal teichoic acid (TAA) in various disease states caused by Staph. coag. positive (SC+) in infants and children. Serum samples were obtained on admission, at 2 weeks, and up to 12 weeks into the illness. TAA were found by CIE in 70% (7/10) of patients with invasive SC+ disease with bacteremia (group A), 14% (1/7) of patients with SC+ infection without bacteremia (group B), 0% (0/19) of patients with bacteremia and/or invasive infections not caused by SC+ (group C) and 0% (0/13) of non-infected, hospitalized patients and healthy children (group D). Gel diffusion was less sensitive than CIE, but was useful for titrating TAA in CIE positive sera. With successful therapy, TAA titer declined or disappeared in group A patients.

TAA serology is specific for SC+ infections, and the determination of TAA by CIE and gel diffusion may help distinguish patients with deep-seated infections associated with SC+ bacteremia from all other patient groups studied.

784 PERSISTENCE OF ANTIBODY FOLLOWING IMMUNIZATION OF CHILDREN WITH GROUPS A & C MENINGOCOCCAL VACCINES.

Lepow, M., Gold, R., Goldschneider, I., Gotschlich, E., Dept. of Pediatrics and Pathology, UCONN Health Center and Rockefeller Univ., NY., NY. 139 infants who had received 1 or 2 doses of groups A and C meningococcal vaccines between 3 and 12 months of age were given bivalent A/C boosters at 2 years of age. Mean anti-A and anti-C concentrations declined by 58% and 72% from peak levels by 4 years of age. The proportions of 4 year old children with >2 µg/ml of anti-A and anti-C (a level correlated with protection) were 51% and 14%. 120 children 6-8 years of age, received 1 dose of A or C vaccine. One month post-immunization, anti-A and anti-C levels were 9.4 and 9.1 µg/ml of antibody. Four years later, anti-A and anti-C concentrations were 3.6 and 1.5 µg/ml; the proportions with >2.0 µg/ml were 81% and 40% respectively. Anti-A concentration in 16 children who had received 2 doses of A vaccine 3 years apart declined 40% from the peak within 2 years post-booster; no further decline occurred in the subsequent year. All the children had >2 µg/ml of anti-A 3 years after the booster. These data suggest that protective antibody concentrations may be induced and maintained against group A disease by a schedule of A vaccine at 3 and 6 months followed by booster at 1½ and 5 years of age. Protective anti-C levels are not achieved in infants under 18 months of age and may not persist for more than a few years in older children with presently available C vaccines.

785 SUSCEPTIBILITY TO E. COLI INFECTION IN NEONATES WITH GALACTOSEMIA. Harvey L. Levy, Stephen J. Sepe, Margaret R. Hammerschlag, Michele Lansky and Jerome O. Klein. State Lab. Inst., Mass. Dept. Public Health, Harv. Med. Sch., Mass. Gen. Hosp., and Boston City Hosp., Boston.

Among the 10 infants identified with galactosemia by routine newborn screening in Massachusetts, four have had severe infection due to E. coli. Three of these neonates died with bacteremia and meningitis while the fourth had a urinary tract infection and survived with treatment. In each of the three infants who died galactosemia was not identified until after the first week of life whereas galactosemia was detected and treated before the sixth day of life in the other seven infants.

Immunologic studies were performed on three of the surviving children. Immunoglobulins were quantitatively normal. In vitro bactericidal activity against E. coli by leucocytes from these children and controls was not significantly inhibited by incubation with galactose in concentrations of 100 - 500 mg/dl.

It appears that galactosemic neonates are unusually predisposed to sepsis, a predisposition perhaps limited to E. coli, and that this tends to become manifest if the onset of dietary therapy is delayed beyond the first week of life. It also appears that this susceptibility may be most striking in "classical" galactosemia in which the biochemical abnormalities are most severe.

786 ANAEROBIC BACTEREMIA IN THE NEONATE. N. Marchick, H. Modanlou, G. Greene, M. Pezzlo, R. Henke, H. Sardarizadeh & R. Huxtable. (Spon. by Thos. L. Nelson.) Univ. of Calif., Irvine, Dept. of Peds., Irvine, California

To determine the frequency of neonatal anaerobic bacteremia in clinically septic infants we did a 10 month prospective study employing a technique applicable in a clinical bacteriology laboratory. Specimens of 0.5-1.0 ml of blood were introduced into prereduced anaerobically sterilized culture medium containing 50 ml Trypticase soy broth with CO_2, sucrose and .025-.05% SPS. Cultures were subcultured at 24 hrs. and processed by a laboratory using techniques recommended by the Center for Disease Control. Special care was taken to avoid aerating the specimen or the bottle. 194 specimens from two tertiary neonatal centers were cultured. Gestational ages varied from 28 to 42 weeks. Longest hospital stay was 60 days. 8% of all cultures were positive. Two (1%) grew anaerobes.

A previous study employed research level techniques and 26% of positive cultures were anaerobes. Because of very much lower yield from techniques presently available to clinical bacteriology laboratories, we doubt the value of routinely culturing for anaerobes in neonates. We suggest that when there is reason to suspect unresponsive anaerobic infection a specialized laboratory be used to process a repeat blood specimen before a change in therapy. Since B. fragilis is practically the only anaerobe resistant to combined penicillin and aminoglycocide treatment, the most logical strategy in managing sepsis unresponsive to routine measures is to add chloramphenicol or carbenicillin to the regimen.