763 DECREASED MORTALITY WITH GENTAMICIN + AMPICILLIN IN TREATMENT OF NEUTROPENIC MICE WITH GROUP B STREPTOCOCCAL (GBS) INFECTION. Audra Deveikis, Michael Mizen, Victoria Schauf, and Louise Riff. (Spon: by Ira M. Rosenthal) Univ., of Ill. at the Med. Ctr. Depts. of Ped. and Med. Chicago

Pencillin G or ampicillin (amp) is recommended for GBS infection although recurrence and relapse are seen in some penicillin treated infants. As previously reported, GBS are resistant to gentamicin (gen) alone, but gen accelerates killing of GBS by amp in vitro and in normal weanling mice. Additionally, survival of GBS-infected mice was greater with amp + gen than with amp.

Because of the poor outcome in neutropenic infants with GBS infection, we have studied the effect of amp and gen in weanling mice made neutropenic (granulocytes $< 1000/mm^3$) with cyclophosphamide and infected IP with 10^7 CFU of GBS strains Ia or Ic. One hour after infection, 3 doses of amp (peak serum level 18 mcg/ml) or amp + gen (peak level 5 mcg/ml) were given at 4 h intervals. Mortality was significantly less in mice given amp + gen (12/62 = 19%) than in mice given only amp (40/60 = 67%). To determine if simultaneous treatment was protective, a single dose of amp (peak level 30 mcg/ml) or amp + gen (peak level 8 mcg/ml) was given at the time of infection. Mortality was again significantly less in mice given amp + gen than in those given amp alone for strain Ia (37/60 = 62% vs 49/54 = 91%) and for strain Ic (5/20 = 25% vs 15/20 = 75%). Since amp + gen was more effective than amp both in treatment and protection against lethal mouse infection, the combination may be of value for GBS infection in neutropenic infants.

764 INFECTIONS IN NEONATAL DEATHS. L. Eisenfeld, R. Ermocilla, J. Sowder, R. Galloway, D. Wirtschafter, B. Riley, M. McDevitt and G. Cassady. Div. of Perinatal Medicine and Dept. of Pathology, Univ. of Ala., Birmingham.

Of 2531 NICU admissions during 30 mo, 359 died. 312 had premortem or terminal (within 2h of death) systemic cultures (blood &/or CSF). 141 (45%) were infected (positive cultures). Only 69 (49%) of these had antibiotics. Failure to provide antibiotics was related to organism; 10/12 Klebsiella, 31/50 E. coli, 3/9 S aureus, 3/18 GBS, 0/7 Candida and 22/45 other organisms had antibiotics. Death in 24h was more common in untreated (19/72-26%) than treated (5/69-7%; $p < .02$). Inflammation was found in 90/109 (83%) of autopsied infected babies. S aureus, Pseudomonas, Group A Strep and Candida were found in 9/19 (47%) infected without inflammation and in only 9/90 (10%) with inflammation ($p < .001$). Positive cultures without inflammation suggest the importance of terminal cultures for definitive diagnosis.

171 babies with negative cultures were non-infected. Nevertheless 92 (54%) received antibiotics. Inflammation was absent in 73 of those 112 autopsied (65%). The 39 with inflammation in contrast to non-infected babies without inflammation were larger (18/39 vs 14/72 > 2500 g; $p < .005$), more mature (18/38 vs 18/73 > 37 wks; $p < .02$), more often outborn (35/39 vs 48/73; $p < .01$) and more often had umbilical venous catheters (15/38 vs 42/71; $p < .05$). Inflammation with negative cultures suggest focal infection in some and an even greater incidence of infection than indicated above. Early diagnosis and effective treatment of perinatal infection remains elusive.

765 TAMPON CULTURE FOR CERVICOVAGINAL HERPES SIMPLEX VIRUS. Edem E. Ekwo and Martin G. Myers (Spon. by C.T. Kisker), University of Iowa Hospitals, Department of Pediatrics, Iowa City.

From 10^1 to 10^6 $TCID_{50}$ of herpes simplex viruses types I and II in 0.10 ml volumes can be quantitatively recovered from vaginal tampons in vitro. The distal several centimeters of tampon were extracted in Hanks buffered saline containing fetal calf serum, penicillin, streptomycin and amphotericin B, for end-point titration. Virus could be recovered from 7 brands of tampons.

In 5 patients with clinically apparent genital herpes simplex infection, viral cultures were obtained from vulvar vesicles, from direct cervical swabs performed at pelvic examination and from tampons inserted by the patient. Virus was eluted from swabs and tampons and end-point titrations were performed. The cervical viral titers recovered by the 2 methods were similar:

Viral titer (log_{10} $TCID_{50}$/0.1 ml)

	1	2	3	4	5
Vulvar Vesicles	3.5	1.0	5.5	4.5	5.5
Cervical Swab	2.5	< 0.5	5.5	4.5	2.5
Tampon Culture	2.0	< 0.5	5.0	4.0	2.5

Thus, quantitative cervicovaginal cultures can be obtained by tampon culture without pelvic examination.

766 SYNERGY OF AMPICILLIN AND CHLORAMPHENICOL AGAINST HAEMOPHILUS INFLUENZAE. William E. Feldman. (Spon. by John D. Nelson, M.D..) Univ. of Texas Southwestern Medical School, Dept. of Pediatrics, Dallas.

The interaction of ampicillin and chloramphenicol against Haemophilus influenzae was studied because the combination is commonly used as initial therapy for meningitis and because little information was available about in vitro synergy or antagonism. Two dimensional 'checkerboard' dilutions of drugs were made in Mueller-Hinton broth containing 2% supplement C using a microtiter apparatus. The minimal inhibitory concentration (MIC) was the smallest concentration of antibiotic(s) preventing a visible button of growth after incubation at 37C for 18h. Synergy, determined by isobolograms made from MICs, occurred against 6 of 13 ampicillin-susceptible and against 5 of 8 ampicillin-resistant H. influenzae type b isolates using 10^4 CFU/ml. Using a large inoculum of 10^7 CFU/ml, synergy occurred against 9 of 13 ampicillin-susceptible and against 2 of 8 resistant strains. Additive effects were observed against the remainder of the type b strains and against single isolates of chloramphenicol-resistant nontypable H. influenzae and H. parainfluenzae. These data indicate that ampicillin and chloramphenicol may be synergistic against a significant number of H. influenzae isolates depending upon inoculum size, and antagonism did not occur. They support the recommendation that both be used as initial therapy for patients with suspected H. influenzae meningitis.

767 THE GROUP B STREPTOCOCCUS (GBS) AND COMPLEMENT (C) ACTIVATION: CLINICAL AND LABORATORY CORRELATES WITH GRAM NEGATIVE SEPSIS, Lawrence J. Fenton, Robert C. Strunk, (Spon. by Grant Morrow, III). Dept. of Pediatrics, University of Arizona, Tucson.

Previous in vitro studies have shown that the alternative C pathway enhances GBS phagocytosis, thus suggesting the possibility of endotoxin-like properties of GBS. These data provided impetus for this study in which the response of the C system in newborn infants with GBS sepsis was measured, correlated with clinical and hematological data and compared to control infants. Serial measurements of CH50, C3, C4, and Factor B were performed on 3 newborn infants with GBS sepsis. Two of the septic infants had a colonized but non-infected identical twin which provided 2 perfectly matched normal controls. Two additional infants were studied as controls: one with group D streptococcal sepsis and one with anencephaly who died after prolonged hypoxic shock. All 3 of the infants with GBS sepsis developed hypotension, prolonged coagulation times, neutropenia and respiratory failure. Two of the 3 infants died. During the course of GBS sepsis, Factor B was depressed 30-35%, C3 was depressed 40-60%, and CH50 was depressed by 100% when compared to cord blood levels. Two of the infants also had a 50-70% depression of C4. In contrast, no C level was decreased in any of the control infants. The activation of the classical and alternative C pathway, the fulminant clinical course and the hematologic data are characteristic of older patients with gram negative sepsis and strongly suggest that the GBS has endotoxin-like properties. This may help explain the high newborn mortality associated with the GBS.

768 DISCITIS: NEW DIAGNOSTIC TECHNIQUES. *Gerald W. Fischer, Gregory A. Popich, Daniel E. Sullivan, and Peter H. Patterson. (Sponsored by James W. Bass). Tripler Army Medical Center, Departments of Pediatrics and Orthopaedics, Honolulu, HI 96819.

The diagnosis of discitis is difficult because it often mimics other diseases such as tenosynovitis, septic arthritis, and osteomyelitis. Intervertebral disc space narrowing, the hallmark of this disease, may not be radiologically evident for 8-10 weeks. Although discitis is considered an infectious process, biopsies are generally obtained late in the disease, are culture negative, and show nonspecific inflammation. In a 3-year prospective analysis of 9 patients with suspected discitis, 7 were confirmed as discitis, 1 had sacroiliac septic arthritis, and 1 had Guillain-Barré syndrome. The mean age was 3.3 yr and 5/7 were girls. Routine spine x-rays were not positive for 6-10 weeks. Gallium citrate and technetium diphosphanate scans were diagnostic (9/9) within 7 and 14 days of symptoms, respectively. Scans were diagnostic on 7 occasions when standard x-rays were not. Anaerobic diphtheroids were isolated from one disc space and streptococci from another. Spica casts were used in 6/7 patients to encourage immobilization, antibiotics in 2/7, and 1 received no specific therapy. All patients recovered. The present study is the first known prospective analysis of discitis. These data suggest that this disease is more common than previously recognized and that radiopharmaceuticals may be used to accurately diagnose discitis. Pediatricians are urged to consider this diagnosis in any child with fever, irritability, and vague abdominal, leg, or back complaints whose etiology is not identified.