1075 PLATELETS PROVIDE A SOURCE OF THROMBOXANE B_2 (TXB_2) DURING ENDOTOXEMIA. Marie J. Stuart, SUNY, Upst. Med. Ctr., Dept Peds, Syracuse, N.Y.

TXB_2 the stable end product of TXA_2 plays a central role in endotoxin shock in the animal (Cook, JCI 65: 227, 80). Plasma TXB_2 is elevated following the infusion of endotoxin, and animals pretreated with a TX synthetase inhibitor are protected from its deleterious effects. The tissue source of TXA_2 during endotoxemia has not however been delineated. Since one of the end products of platelet (plt.) Arachidonic Acid (A.A.) metabolism is TXB_2, we studied the effects of endotoxin (E. Coli, 1μg/ml) on plt. A.A. release and conversion to TXB_2. In paired expts., in the presence of endotoxin, the addition of thrombin (0.5μ/ml) caused human plts to release 29.1 ± 3.4% (1S.E.) of ^{14}C A.A. from plts. This value was increased ($p<0.02$) when compared to the release in the absence of endotoxin (21.9 ± 3.6%). Similarly, TXB_2 production was elevated ($p<0.01$) when plts. were preincubated with endotoxin prior to the addition of thrombin (6.1 ± 0.6), compared to TXB_2 formed in its absence (3.4 ± 0.5). Endotoxin thus facilitates the release of A.A. from plt. phospholipids, and enhances conversion of the released A.A. to TXB_2 i.e. one of the sources of TXB_2 during endotoxemia is the plt. Since TXA_2 is a potent aggregator, this study also provides a mechanism for the thrombocytopenia observed in endotoxemia.

1076 MECHANISMS OF HUMORAL IMMUNITY TO H. INFLUENZAE TYPE B (Hib). Terry L. Stull, Richard F. Jacobs, Marilyn C. Roberts, Chris B. Wilson, Arnold L. Smith, Univ. of Wash. Sch. of Med. Dept. of Peds./Child. Ortho. Hosp. Seattle, WA

To clarify ambiguous data regarding mechanisms of humoral immunity to Hib we examined bactericidal (BC) and opsonizing (OP) activity of pooled adult serum (PS) and hyperimmune serum (HS). 4 Hib strains from CSF and 3 strains from the nasopharynx (NP) of healthy children were examined. Duplicate assay mixtures contained log (L) or stationary phase (S) Hib, serum, complement (agammaglobulinemic serum), and M199 (BC assay) or polymorphonuclear leukocytes (PMN) in M199 (OP assay). The mixture was incubated at 37° for 30 min; aliquots were removed, PMN lysed, and serial dilutions cultured at the beginning and end of incubation. A decrease in CFU of 1 $\log_{10}$ was considered significant. All 4 S-CSF strains, 2 of 4 L-CSF strains and 1 of 3 S-NP strains were sensitive to PS BC activity; adding PMN's did not enhance killing of organisms for which serum was BC. The other 2 L-CSF strains and 2 S-NP strains and all 3 L-NP strains were resistant to the BC activity of PS. 2 of 3 L-NP strains were OP by PS; other strains resistant to BC activity of PS were also resistant to OP. BC and OP activity of HS was ≥ PS for each strain. However, 1 of 3 NP strains in both growth phases and 1 other L-NP strain were resistant to BC activity of HS. Assuming normal adults are immune to invasive Hib infection the serum assay reflecting this immunity is the BC activity against invasive S phase strains. We speculate that circulating antibody in adults is directed only against invasive Hib.

1077 RELATIONSHIP BETWEEN THE NUMBER OF BACTERIA IN THE BLOOD OF CHILDREN AND THE CLINICAL DISEASE. T.D. Sullivan, L.J. La Scolea Jr. and E. Neter, State Univ. of N.Y. at Buffalo and Children's Hospital, Dept. of Ped., Buffalo, N.Y.

The aim of this investigation was to determine the possible value of quantitative blood cultures in the diagnosis and management of febrile children with or without focal signs of infection. The magnitude of bacteremia was determined by a recently described Quantitative Direct Plating (QDP) procedure; heparinized blood (0.5 ml each) was plated onto blood and chocolate agar plates. Data on Haemophilus influenzae, Streptococcus pneumoniae and Neisseria meningitidis bacteremia of 79 pediatric patients, who were not on prior antibiotic therapy, was correlated with the type and severity of the disease. Regarding H. influenzae and S. pneumoniae, 23 (85%) of 27 patients with meningitis or epiglottitis had more than 100 organisms/ml of blood, in contrast to 2 (5%) of 40 patients with upper respiratory infection, otitis media, pneumonia, arthritis, or cellulitis ($p<0.001$). No significant difference was noted in the magnitude of bacteremia due to N. meningitidis between 12 patients with or without meningitis. The possible predictive value of the quantitation of bacteremia is illustrated by the observation of three children with seemingly mild respiratory infection and counts in excess of 100 organisms/ml who, within 20 hours, developed meningitis or epiglottitis. From these observations it is suggested that high bacterial counts in excess of 100 organisms/ml of blood should alert the physician to the existence or possible development of serious disease.

● **1078** NEW IDENTIFICATION OF *C difficile* AS A CAUSE OF CHRONIC DIARRHEA WITHOUT CLASSIC SIGNS OF COLITIS. J.S. Sutphen, R.J. Grand. Harvard Med. School, Children's Hosp. Med. Ctr., Div. of Gastroenterology, Boston, MA

In a large referral clinic, 6 patients, 8 mos. to 7 yrs, have been seen over the past year with chronic diarrhea due to *C difficile*. All patients had received previous antibiotics. Other bacterial and parasitic diagnoses were excluded. Diarrhea began after antibiotics in 4/6, during antibiotic therapy in 2/6. Diarrhea persisted 2.5 to 12 months prior to clinic visit. One patient with longest duration of symptoms had growth failure; only one patient had gross bleeding by history. All stools were consistently negative for occult blood and leukocytes. ESR was elevated (22 and 28) in 2/6 patients. WBC was increased in one patient. Initial stool *C difficile* toxin titers were positive in all patients. One patient spontaneously became toxin negative and asymptomatic without therapy, while 5 were treated with oral vancomycin for 10-14 days. Diarrhea promptly disappeared in all patients, with clearance of toxin in 4/4 patients assayed while asymptomatic. Four of the 5 treated patients redeveloped symptoms and toxin titers following therapy; three required repeat vancomycin. All patients became toxin negative and are now well one to 11 months after the last course of vancomycin. Sigmoidoscopy and rectal biopsy performed on one patient showed focal surface epithelial degeneration, and crypt abscesses (no pseudomembrane). The biopsy returned to normal with clearance of toxin and diarrhea. These patients demonstrate a new association of *C difficile* as cause for chronic antibiotic-associated diarrhea without classic colitis symptoms.

1079 ISOLATION OF VIRUSES FROM THROAT SWABS SUBMITTED FOR DETECTION OF GROUP A STREPTOCOCCI

Ella M. Swierkosz (Spon. by Thomas Aceto, Jr.), St. Louis University School of Medicine, Cardinal Glennon Memorial Hospital for Children, Department of Pediatrics & Adolescent Medicine, Diagnostic Virology Laboratory, St. Louis, Missouri.

Throat swabs, collected from August to November 1980, and submitted for Group A streptococci detection by the fluorescent antibody (FA) technique were studied for isolation of viruses. Ninety-four percent of specimens were from patients < 15 years of age. Most were outpatients. Culturette™ swabs were first processed for FA before inoculation of cell cultures for viral isolation in the Diagnostic Virology Laboratory. Of a total of 163 swabs, 23% yielded virus, 8% were positive for Group A streptococci, and 1% (2 specimens) were Group A streptocci and virus positive. Viral isolates included enteroviruses (60%), parainfluenza viruses (16%), herpes simplex viruses (13%), rhinoviruses (18%), and adenoviruses (3%). An enterovirus and a parainfluenza virus were obtained from the two streptococci/virus positive specimens. Forty-seven percent and sixty-six percent of viral isolates were identifiable by day 2 and day 3 post inoculation, respectively. These data demonstrate that 1) a single throat swab is suitable for both Group A streptococcal and viral surveillance studies; 2) pediatric patients with pharyngitis yield virus much more commonly that Group A streptococci; 3) simultaneous infection is uncommon. Furthermore, detection of viruses by day 2 or 3 may prevent unnecessary antibiotic therapy.

1080 EVALUATION OF MOXALACTAM FOR THE TREATMENT OF MENINGITIS DUE TO S. PNEUMONIAE WITH DIFFERING SUSCEPTIBILITIES TO PENICILLIN. Martha M. Tarpay, David F. Welch, Melvin I. Marks. University of Oklahoma Health Sciences Center, Department of Pediatrics, Oklahoma City, Oklahoma.

Thirty-four strains of S. pneumoniae(Sp), 2 penicillin(pen) resistant(r), 12 pen relatively resistant(rr) and 20 pen susceptible(s) were tested against moxalactam(mox) by disk diffusion, agar and micro-broth dilution and killing curve methods. The 2 pen-r strains required >32ug/ml mox for inhibition. MICs of mox for the 12 pen-rr strains ranged from 1-16ug/ml with modal MICs of 8ug/ml. Fifty percent of the pen-s strains were inhibited by 1 ug/ml and 95% by 2ug/ml of mox. Cross-resistance to mox was noted for pen-r and most of the pen-rr strains.

Mox was compared to pen therapy in rabbits with bacterial meningitis induced by intracisternal inoculation of 10^7-10^8 CFU/ml. Two different strains were used: strain one mox MIC=1ug/ml, pen MIC=0.03ug/ml; strain two mox MIC=8ug/ml, pen MIC=0.5ug/ml. Antibiotics were given every 4hr for 16hr in 50mg/kg/dose(mox) and 100,000U/kg/dose(pen). The mean % penetration into the CSF (CSF/serum x 100) were mox:17%, pen:3%, resulting in peak concentration ≥ fourfold MIC of the pen sensitive strain.

There was no significant reduction of CSF bacterial titers with mox vs untreated controls for both strains, whereas pen reduced titers of sensitive strains ($p<.001$). Mox is less active than pen against Sp in vitro and in experimental meningitis. It should not be used alone in the initial treatment of infants with meningitis.