1081
BACTERIOPHAGE ARE PRESENT IN THE SPUTUM OF PATIENTS WITH BRONCHOPULMONARY Ps. AERUGINOSA INFECTIONS
Caroline M. Eppler, Michael E. DeJong (Spon. by J. Schulman) GBRTNAM06, Bethesda, Maryland 20025
Although it is generally appreciated that Ps. aeruginosa-specific phage can be isolated from natural sources in which Ps. aeruginosa can be found, such as seawater and sewage, the presence of phage at the sites of Pseudomonas infection in man is not widely recognized. Using routine bacteriological procedures we show that species-specific phage can be consistently recovered from the sputum of patients with chronic Ps. aeruginosa bronchopulmonary infections, including 6 patients with cystic fibrosis and one non CF individual. Ps. aeruginosa-specific phage were present in sputum at concentrations ranging between 10^7 to 10^9 viable particles/ml with as many as 4 different phage strain isolated from a single individual. Of the 16 phage isolates, at least 12 different phage strains could be identified based on bacterial host sensitivity and electron microscopic morphology. It would appear that Ps. aeruginosa and its phage commonly coexist at the site of human bronchopulmonary infections, and most probably at all sites of Ps. aeruginosa infection, and should be considered as possible factors influencing the pathogenicity of Ps. aeruginosa.

1082
EFFECTS OF PERSISTENT MIDDLE EAR EFFUSION (MEE) ON DEVELOPMENT OF SPEECH AND LANGUAGE (SAL).
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To determine effects of MEE occurring during the first 3 yrs. of life, we administered tests of SAL to 218 3 yrs., white, English-speaking children with normal developmental histories. All had been followed prospectively since birth; we stratified according to duration of MEE, sex, type of health-care, and socio-economic status (SES). Below are selected results for children with MEE (130+ days) and those without MEE (<120 days) in a suburban, private practice (I) and an urban clinic (II).

| Test | 130+ | <30 | P | 130+ | <30 | P |
|------|------|-----|---|------|-----|---|
| babbling | 106 | 114 | .99 | 95 | 43 | .04 |
| PSL-AC | 121 | 135 | .004 | 116 | 115 | NS |
| PSL-VA | 131 | 130 | .006 | 115 | 112 | NS |
| PPVT = Peabody Picture Vocabulary Test | | | | | | |
| PSLS = Pre-School Language Scale | | | | | | |
| AC = Auditory Comprehension | | | | | | |
| VA = Verbal Ability | | | | | | |

These data suggest that MEE early in life is associated with significant impairment of SAL; children from higher SES appear at greater risk. This study does not show if such effects are permanent or transient.

1083
DIFFUSION OF MOXALACTAM INTO CSF OF CHILDREN WITH BACTERIAL MENINGITIS.
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Wayne State University and Children's Hospital, Department of Pediatrics, Detroit.
Moxalactam (Mox, a new oxo-β-lactam antibiotic, is active against an expanded spectrum of gram negative organisms including Haemophilus influenzae. It has also been reported to diffuse into cerebrospinal fluid. We administered IV Mox to children (6 wks-4 yrs) receiving conventional antimicrobial therapy for bacterial meningitis. Plasma and CSF specimens were collected 2 to 3 hours after a dose and assayed for Mox concentration by HPLC (capable of detecting 1 µg/ml). Eight patients received single doses of 15 or 25 mg/kg. In 11 determinations the plasma levels ranged between 4.7 and 29.4 µg/ml and averaged 15.7± (SD 3.4) µg/ml of plasma concentration. There was no correlation between the diffusion of Mox into CSF and the CSF white cell count, however Mox diffused to a greater extent according to protein content. In summary, Mox diffuses into CSF but such diffusion is unpredictable. Caution must be exercised in using Mox alone in the treatment of meningitis.

1084
UNUSUAL LABORATORY FINDINGS IN ECOVIRUS-11 MENINGITIS.
L. Murray Thompson, Margaret C. Fisher, Adamadie C. Adeyemo, Michael E. DeJong (Spon. by L. Schulman) GBRTNAM06, Temple University School of Medicine, St. Christopher's Hospital for Children, Department of Pediatrics, Philadelphia, Pa.
Eco virus-11 (E-11) was isolated from the cerebrospinal fluid (CSF) of 22 children in a 1980 summer outbreak of meningitis. Seventeen(77%) were <6 mos old(range 2 wk-9 yr). 54% had CSF cell count >5000/mm3 and 44% had >10000/mm3. CSF polymorphonuclear's(P) and 24% had >90%. None had CSF glucose <40mg/dl; 41% had CSF protein >45mg/dl and 6% had >75mg/dl. Three patients(pts)(s) had entirely normal CSF. In 60% peripheral WBC was >5000/mm3; only 20% had >5000/mm3. Four pts(4 mos old) had repeat CSF exams. All had >500 cells/mm3 and the two youngest(age 2 wk) still had >500 P after 1 and 3 days. CSF findings were compared with data from pts with bacterial meningitis(B). Cell count >5000/mm3, glucose >45mg/dl, and protein >75mg/dl were statistically associated with B. However, 14% of E-11 pts had at least one of these findings and 20% of E-11 had none of these signs. CSF P >75% was as frequent in E-11 pts as in B pts. Peripheral WBC <5000 or <15000/mm3 and absolute band count >500/mm3 were statistically associated with B but 39% of E-11 pts had one of these abnormalities. Certain CSF findings in our pts have not been reported for E-11 and are uncharacteristic of viral meningitis: 1) leukocyte response more characteristic of bacterial meningitis; CSF P >90%, persistence of CSF P beyond 24 hrs, peripheral band count >500, and 2) entirely normal CSF.

1085
DIAGNOSIS AND TREATMENT OF PURULENT NASOPHARYNGITIS - A DOUBLE-BLIND, TWO-MOZ-DRUG EVALUATION.
James Todd, James Damato, Warren Todd, C. Henry Kempe Center for Investigative Pediatrics, The Children's Hospital; Pittsfoilie Medical Center; Denver.
Perinatal nasal pharyngitis and the associated nasopharyngeal bacterial meningitis has been attributed to the D+ treatment groups. Routine culture and/or histamine (D=pseudoephedrine/triprolidine) or their corresponding placebo equivalents (A0D+, A0D-, A-D, A-D). Follow-up parent, physician, and bacteriologic evaluations were performed after 5 days of therapy without knowledge of active drug status. Groups were comparable for age, sex, race, number of patients withdrawn from study, days ill, fever >38.0 C, appearance of discharge, nasal crusting, and number of days until follow-up. 21% of patients grew H. influenzae type b and only 83 S. pyogenes on initial culture. Nasal crusting was significantly (p<0.01) associated with the growth of S. pneumoniae or H. influenzae type b, suggesting a possible pathologic relationship. There were, however, no significant differences between active drug and placebo treatment groups for change in nasal discharge, complications, apparent drug benefit, or change in nasal flora with active antibiotic treatment. Significantly (p<0.05) more side effects were attributed to the D+ treatment groups. Routine culture and/or treatment of purulent nasopharyngitis cannot be recommended unless properly controlled studies demonstrate a significant drug benefit.

1086
CORONAVIRUS-LIKE PARTICLES AND NEONATAL GASTROINTESTINAL DISEASE.
Yvonne E. Vaughan, C. Georgie Ray, Linda L.iman, Claire H. Payne, Donna J. Beck, Paula F. Low, University of Arizona, College of Medicine, Department of Pediatrics and Pathology, Tucson, Arizona.
Coronavirus-like particles (COP) are associated with gastrointestinal (GI) symptoms in adults, including man. We report an intensive care nursery (NICU) outbreak of GI sx associated with COP, identified by electron microscopy. In a follow-up review, the health of affected infants. Immune aggregation of stool COP occurred with sera of COP positive (4) infants only. The presence of stool COP, associated by I HCW-wide survey over 40 weeks, fell from 67% to less than 10%, paralleling prevalence changes in the community. Most infants surveyed were pre-mature. Overall, 36% (71 of 198) of all GI sx positive infants were neonatal or intraparental acquisition was suggested by the finding that 342 (11/12) of the COPL+ infants were examined within 72 hours of birth. COPL+ infants were more likely to have GI sx within 7 da of survey (p<.005), including water loss stools (p<.005), and the following sx persisting for more than 2 days: gastric retention (p<.001), bilious gastric aspirates (p<.02), abdominal distension (p<.01) and gross or occult blood in the stool (p<.005). COPL+ infants were also more likely to have multiple sx and had more discomforting GI sx that could not be attributed to other causes. We conclude that stool Coronavirus-like particles are associated with clinically significant GI disease in the newborn.