1081 BACTERIOPHAGE ARE PRESENT IN THE SPUTUM OF PATIENTS WITH BRONCHOPULMONARY Ps. AERUGINOSA INFECTIONS

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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 10^5 to 10^7 viable particles/ml with as many as 4 different phage strains recovered 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 (PMEE) ON DEVELOPMENT OF SPEECH AND LANGUAGE (S&L).

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To determine effects of PMEE occurring during the first 3 yrs. of life, we administered tests of S&L to 218 3 y.o., white, English-speaking children with normal developmental histories. All had been followed prospectively since birth; we stratified according to duration of PMEE, sex, type of health-care, and socio-economic status (SES). Below are selected results for children with PMEE (130+ days) and those without PMEE (<30 days) in a suburban, private practice (I) and an urban clinic (II).

Test	I	130+	<30	P	II	130+	<30	P
PPVT		104	114	.003		92	94	NS
PSLS-AC		121	135	.004		116	115	NS
PSLS-VA		113	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 PMEE early in life is associated with significant impairment of S&L; 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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Moxalactam (MOX), a new oxa-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-4½ 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 of MOX). 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 but MOX was detected in the CSF in only one instance. Eight patients received 50 mg/kg of MOX every 8 hours for 3 doses, and in 5 patients the drug diffused into CSF. MOX was detectable in 3/5 of CSF specimens early in the course of illness (2nd or 3rd day) and averaged 20% (range 2.5 to 30%) of plasma concentration. It was detectable in 5/11 of CSF specimens obtained later in the illness (13th to 22nd day) and averaged 15.7% (6 to 36%) 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 in patients with higher CSF 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 ECHOVIRUS-11 MENINGITIS.

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Echovirus 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 counts >300/mm^3 and 14% had >500/mm^3(range 0-2250). 59% had ≥50% polymorphonuclears(P) and 24% had >90% P. None had CSF glucose <40mg/dl; 41% had CSF protein ≥45mg/dl and 6% had >75mg/dl. Three patients(pts) had entirely normal CSF. In 86% peripheral WBC was 5000-15000/mm^3; only 3 had >75% P but 20% had absolute band count >500/mm^3. Four pts(<3 mos old) had repeat CSF exams. All had >150 cells/mm^3 and the two youngest(age 2 wk) still had >50% P after 1 and 3 days. CSF findings were compared with data from pts with bacterial meningitis(B). Cell count >500/mm^3, 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 B pts had none of these findings. CSF P >75% was as frequent in E-11 pts as in B pts. Peripheral WBC <5000 or >15000/mm^3 and absolute band count >500/mm^3 were statistically associated with B but 38% 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-DRUG EVALUATION.

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132 children with purulent nasopharyngitis and no other indication for specific treatment had gram stain and bacterial culture of nasopharyngeal discharge and were randomized to 4 treatment groups with antibiotic (A=cephalexin) or decongestant/antihistamine (D=pseudoephedrine/triprolidine) or their corresponding placebo equivalents (A+D+, A+D-, 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 8% 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.

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Coronavirus-like particles (CVLP) are associated with gastrointestinal (GI) symptoms (sx) in mammals, including man. We report an intensive care nursery (NICU) outbreak of GI sx associated with CVLP, identified by electron microscopy, in the stools of affected infants. Immune aggregation of stool CVLP occurred with sera of CVLP positive (+) infants only.

Prevalence of stool CVLP, ascertained by 8 NICU-wide surveys over 40 weeks, fell from 67% to less than 10%, paralleling prevalence changes in the community. Most infants surveyed were premature. Overall, 36% (32/88) of all infants were CVLP +. Prenatal or intrapartum acquisition was suggested by the finding that 34% (11/32) of the CVLP + infants were examined within 72 hours of birth.

CVLP + 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 distention ($p<.01$) and gross or occult blood in the stool ($p<.005$). CVLP + infants were also more likely to have multiple sx and to have feeds discontinued for more than 3 days due to GI sx.

We conclude that stool Coronavirus-like particles are associated with clinically significant GI disease in the newborn.