

NORMAL ELECTROENCEPHALOGRAMS IN SUBACUTE SCLEROSING PANEN-CEPHALITIS (SSPE). Michael A. Sisk and John F. Griffith, Duke Univ. Med. Ctr., Dept. of Ped., Durham, N. C.

Eleven cases of SSPE from the rural southeast were studied at Duke from 1968-73. Eight patients had a history of measles immunization and 5 of these reportedly had antecedent natural measles. The diagnosis was confirmed in every case either by the ultrastructural demonstration of virus nucleocapsids in brain tissue or the detection of anti-measles antibodies in the CSF.

Six of the patients had normal EEGs when first examined, an average of 6 months after the onset of illness. This group did not differ from those with abnormal EEGs in any important detail including age, sex, measles antibody titer, severity or duration of illness or the length of survival. All of the EEGs eventually became abnormal, 4 with the classical suppression burst pattern considered diagnostic for SSPE. At the time of the normal tracing, one patient had well developed myoclonus.

These findings indicate that a normal EEG is common in SSPE even when the clinical disease is moderately advanced. This re-emphasizes the diagnostic importance of CSF measles antibodies when other studies are normal.

COUNTERIMMUNELECTROPHORESIS IN HEMOPHILUS INFLUENZAE TYPE B EPIGLOTTITIS AND PERICARDITIS. Edward W.P. Smith and David L. Ingram, Dept. of Ped., Yale Univ. Sch. of Med., Yale-New Haven Hosp., New Haven, and Dept. of Ped., Harvard Med. Sch., Children's Hosp. Med. Ctr., Boston (Intr. by H. A. Pearson).

Counterimmunoelectrophoresis (CIE) was used to detect polyribosephosphate (PRP), the capsular polysaccharide antigen of *Hemophilus influenzae* type b (H.flu.b), in sera of patients with H.flu.b epiglottitis and sera and pericardial fluids of patients with H.flu.b pericarditis.

CIE was performed for 30 mins. at 30 milliamps using (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> precipitated rabbit antisera and Hyland agar gel plates. The sera of 7 patients with H.flu.b epiglottitis were tested prior to IV Ampicillin therapy. Immunoprecipitin bands became visible in 3 specimens after cooling for 30 mins. and in a fourth after cooling for 10 hrs. Three sera contained 5 ng of PRP per ml, while the fourth contained between 2.5 and 5 ng of PRP per ml, a quantity which represents the lower limits of sensitivity for this technique. The brief course of epiglottitis prior to therapy may explain the small amount of PRP produced.

In contrast, pericardial fluids and sera of 3 patients with H.flu.b pericarditis were markedly positive. Two pericardial fluids were quantitated. The first contained 5.85x10<sup>5</sup> ng of PRP per ml and the second contained 1.9x10<sup>5</sup> ng of PRP per ml. The pericardial sac may function as a depot for large amounts of antigen.

ABNORMAL COLONIZATION AND INFECTION IN NEONATES Katherine Sprunt, Grace Leidy and Winifred Redman, College of Physicians and Surgeons, Columbia University, Babies Hosp, Dept. Ped., N.Y.C.

The incidence of infection and its relationship to bacterial colonization of the pharynx of infants in a neonatal ICU has been investigated. Pharyngeal bacterial flora were frequently monitored on a semi-quantitative basis in 62 infants with RDS and 70 concurrent broadly matched controls. All infections occurred in infants with high abnormal colonization and were due to the type of bacterium producing the high colonization. Early high abnormal colonization occurred more frequently in RDS infants (42%) than in controls (27%); this high incidence was independent of antibiotic treatment. 5 of 9 abnormally colonized RDS infants without therapy had sepsis compared to only 1 of 5 control infants (urinary tract infection). *Staphylococcus epidermidis* and Gram negative enteric bacilli were the most frequent causes of high colonization; most infections were due to the enteric bacilli. Infection rates were similar in the two groups receiving antibiotics (RDS 4/41, controls 3/50) but differed when no antibiotics were given (RDS 6/21, controls 1/20). We recommend that all ICU infants, particularly those with RDS, be followed closely with frequent throat cultures to determine those with added risk of infection. Abnormally colonized infants should be treated on minimal indication as directed by the antibiotic sensitivity of the colonizing organism.

BACTERIA AND PHOTOTHERAPY, J.S.Storer, L.T.Gutman, G.W.Brumley (Intro.S.L.Katz). Dept.Ped. Duke Univ.Med.Ctr., Durham, N.C.

To identify alterations in multiplication and antimicrobial sensitivity patterns, *Staphylococcus aureus* (S.a.), *Escherichia coli* (E.c.) and *Streptococcus pyogenes* (S.p.) were exposed to quantities of blue light (400-500nm) comparable to those used in phototherapy of neonatal hyperbilirubinemia.

Multiplication of S.p. was significantly decreased by photoirradiation: 1) delivered for 8 hrs. or longer with a fixed radiant flux of 28µw/cm<sup>2</sup> (measured at 455nm) (Tab.A) and 2) with radiant flux of 14µw/cm<sup>2</sup> or more for a fixed time of 48 hours (Tab.B). Abnormal bacterial appearance on Gram stain, 'fried egg' colony appearance and transferability of variant colonies on solid medium indicated that photoirradiation had induced cell wall defective variants of S.p. after one hour at 28µw/cm<sup>2</sup>.

S.a. photoirradiated at 28µw/cm<sup>2</sup> for 48 hours, exhibited increased sensitivity to kanamycin (p<.1) as compared to controls. Multiplication of S.a. was not affected. Photoirradiation of E.c. had no effect. Morphology of photoirradiated S.a. and E.c. was normal.

These results suggest that blue light in phototherapeutic amounts may affect bacterial cell wall, as manifested by decreased rates of multiplication, transferable abnormal cellular morphology, and increased sensitivity to kanamycin.

A. Irradiation at 28µw/cm <sup>2</sup>				B. Irradiation for 48 hours			
time(hr)	18	16	24	11	14	21	28
% + col.	0	10	30	0	20	18	50
p<	.05	.05	.01	.1	.05	.01	p<

EPIDEMIC OF KANAMYCIN RESISTANT SERRATIA MARCESCENS SEPSIS IN A NEWBORN INTENSIVE CARE UNIT. M. Akram Tamer, Ellen Monkus, and George Counts. (Intr. by William W. Cleveland). Dept. of Ped. and Path., Univ. of Miami Sch. Med., Miami, Fla.

During a period of 18 months, 15 cases of *Serratia* septicemia were identified in the Neonatal ICU of a large county hospital including two outbreaks of 5 and 4 cases each.

Weight	Survival/Patient Number	Mortality	Age at Onset
2,500gm	5/13	61%	1 to 15 days
2,500gm	1/2		8 days

Both term infants were postoperative patients (TE-fistula).

An epidemiologic survey of the Neonatal ICU (8 beds) and the adjacent premature nurseries (35 beds) revealed:

Equipment:	5/230 cultures grew <i>Serratia</i>
Personnel:	2/67 (2 nurse's hands)
Infants:	9/238 (5 NP, 3 rectal, 1 eye).

Control measures included strict hand washing with change from hexachlorophene to a povidone-iodine preparation, elimination of water in isolettes, and rinsing of hands, isolettes and other equipment with 2% acetic acid. Gentamycin replaced kanamycin in accordance with the sensitivities. Two premature infants with meningitis survived after treatment with systemic and intrathecal gentamycin.

In a nursery epidemic of sepsis and meningitis due to *Serratia marcescens*, significant morbidity and mortality was seen in premature and ill neonates. This emphasizes the importance of considering any microorganism as a potential devastating pathogen in susceptible populations.

DISEASE PREVENTION BY MENINGOCOCCAL SEROGROUP C POLYSACCHARIDE VACCINE IN PRESCHOOL CHILDREN: RESULTS AFTER ELEVEN MONTHS IN SAO PAULO, BRAZIL. Augusto de E. Taunay, Paulo A. Galvao, Jose S. de Moraes, Emil C. Gotschlich, Roger A. Feldman. Instituto Adolfo Lutz, Sao Paulo, Brazil; Hospital Emilio Ribas, Sao Paulo; Regional Health Department, Greater Sao Paulo; Rockefeller University, New York; Center for Disease Control, Atlanta, Georgia.

During an outbreak of serogroup C sulfonamide-resistant *Neisseria meningitidis* in the city of Sao Paulo, Brazil, serogroup C meningococcal polysaccharide was given to 67,000 children between 6 and 35 months of age, using jet injector guns and a 50 microgram dose without any preservative. An equivalent number of children received a diphtheria-tetanus toxoid injection. Allocations of children to the vaccine or control groups were made by the use of random number tables at 24 vaccine centers throughout the city during the period December 12-22, 1972.

Serologic studies of 133 children receiving the vaccine or the control materials were completed using a radioimmunoassay technique and indicated that the program of vaccination was effective in initiating serologic response.

After 11 months of follow-up, 32 cases of culture- or counterimmunoelectrophoresis-proven serogroup C meningococcal disease have occurred in children who took part in the vaccine trial. Although there is no indication that the vaccine was effective in preventing disease in the children from 6 to 23 months of age, those between 24 and 35 months of age appeared to be protected. The trial is continuing.