

**1122** T LYMPHOCYTE SUBSETS IN CHILDREN WITH GRAM NEGATIVE SEPSIS. Lakshmi D. Pappu, Barbara N. Koger, Mariano F. La Via, Claude Loadholt. Medical University of South Carolina. Departments of Pediatrics and Laboratory Medicine.

We compared T lymphocyte subsets of 14 normal term newborns (cord blood) to those of 8 children with gram negative sepsis. Six patients were <3 months, 2 were 3 yrs., and one 11 months of age. Blood cultures were positive for *H. influenzae*(3), *Serratia m.* (1), *Klebsiella* (2) and *E. coli* (2). Total T cells (OKT3, OKT11), helper/inducer cells (OKT4), and suppressor/cytotoxic cells (OKT8) were analyzed by flow cytometry (Ortho Diagnostic Systems), and the helper/suppressor ratio calculated. Significance was accepted as  $P < 0.05$ . Suppressor T cells were significantly lower in infected children with a significant increase in helper/suppressor ratio.

	T CELL SUBSETS				
	OKT3	OKT4	OKT8	OKT11	OKT4/OKT8
Normal (14)	56+ 14.5	41 +9.08	23+ 5.2	63.35 +11.9	1.82 +0.49
Infected (8)	60.8 +15.28	45.4 +14.2	16.86 +6.95	57.8 +21	3 +1
	Mean ± S.D.				

**1123** EVIDENCE THAT BREAST MILK PROTECTS AGAINST OTITIS MEDIA WITH EFFUSION (OME) IN INFANTS WITH CLEFT PALATE. Jack L. Paradise, Barbara A. Elster, U. of Pittsburgh, Cleft Palate Ctr. and Dept. of Ped., Pittsburgh PA.

In a prospective study of nutrition and middle-ear disease in 252 infants with cleft palate, entailing frequent standardized pneumatic otoscopic examination, we encountered sporadic infants with one or both ears effusion-free on one or more occasions. Each was additionally unusual in having been fed breast milk. We therefore reviewed the prospectively obtained feeding histories of all subjects in relation to the recorded presence or absence of OME at each examination, excepting examinations subsequent to myringotomy if performed.

Of the 252 infants enrolled in an 8-yr. period, 231 (91.7%) were ≤ 2 mos. of age at entry. Two hundred twenty-two (88.1%) received cow milk or soy formulas with no reported admixture of breast milk; 30 (11.9%) received breast milk exclusively or in part for varying periods, in virtually all instances expressed by the mother and provided via artificial feeder. In none of the 222 infants fed only formula was either ear effusion-free at any examination during the first 18 mos. of life, whereas in 11 (37%) of the 30 infants fed breast milk, one or both ears were effusion-free at one or more examinations ( $P < 0.0001$ ). Freedom from OME was found across categories of cleft type, race, sex, SES, and birth order.

These findings provide evidence (1) that in infants with cleft palate, impaired Eustachian tube function is not the sole factor in the pathogenesis of OME, and (2) that breast milk protects against the development of otitis media in infancy.

**1124** FEVER IN BURNED CHILDREN. Ruth Ann Parish, Alvin H. Novack, David M. Heimbach, and Loren H. Engrav. (Sponsored by Thomas H. Shepard) University of Washington School of Medicine, Harborview Medical Center, Depts. of Pediatrics and Surgery, Seattle, Washington.

Anecdotal information from health professionals who work with burned patients suggests that these patients frequently have temperature elevations during their hospital courses. To investigate the natural course of fever in burned children and to identify those factors which correlate with fever occurrence, a retrospective study was undertaken. The charts of all patients ages 0 - 16 years admitted for burn care to Harborview Medical Center (the regional burn center for the Pacific Northwest) in the years 1979-82 were reviewed. There were 223 children admitted for burn care within 24 hours of the burn occurrence, and who stayed in the hospital longer than 48 hours. Each patient's highest temperature recorded for every 8 hour shift was plotted for the patient's entire hospital stay.

We found that a significant rise in temperature, independent of culture-documented infection or physical findings suggestive of infection, occurs between 36 and 60 hours post-burn. Life-table and multiple regression analyses suggest that the percent surface area burned correlates most strongly with occurrence of fever, followed by age of the patient. Sex, race, etiology of burn, time and place of burn occurrence and body-location of the burn do not appear to be correlated with fever.

This knowledge of a 'fever curve' may prevent unnecessary, costly and uncomfortable sepsis work-ups in burned children who have no other physical findings suggesting a source of infection.

**1125** ROLE OF ARACHIDONIC ACID METABOLITES (AAM) IN HEMODYNAMIC AND HEMATOLOGIC MANIFESTATION OF GROUP B STREPTOCOCCAL (STREP) SEPSIS. K.J. Peevy, G.L.

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Although STREP-induced shock appears to be modulated by AAM, the importance of the AAM in mediating neutropenia and thrombocytopenia and the role of neutropenia and thrombocytopenia in development of shock is unknown. To assess these relationships in rabbits, the changes from baseline (BASE) in mean arterial pressure (MAP), neutrophil (NT) and platelet count (PLT) were correlated with changes in thromboxane  $B_2$  (TB), prostacyclin metabolite 6KPGF<sub>1α</sub> (6K) and 5-HETE, a lipoxygenase metabolite following heat-killed STREP ( $10^{12}$  cells/kg) infusion before and after prostaglandin (PG) inhibition with indomethacin (IND) (4 mg/kg). The table shows modulation of STREP effects by IND when given before (GpI) and after (GpII) STREP. Values are X ± SEM. \* $P < 0.05$  vs BASE.

Gp	MAP (mmHg)	TB (pg/ml)	6K (pg/ml)	NT ( $\times 10^7$ )	PLT ( $\times 10^9$ )
I	BASE 98±4	35.6±4.8	15.3±3.0	2.2±.6	365±29
(N=9)	STREP *47±5	*74.6±5.3	*92.3±27	*.2±.05	*112±38
	STREP+IND 87±6	27.2±4.8	30.9±10.2	*.2±.07	*111±37
II	BASE 89±5	40.1±4.3	28.7±5.9	2.5±.5	338±68
(N=7)	IND 86±6	*13.7±6.6	21.2±6.9	1.9±.5	384±53
	IND+STREP 84±5	* 8.7±1.5	13.8±4.2	*.3±.02	* 69±21

IND did not inhibit STREP-induced increases in 5-HETE production. This study shows 1) that STREP shock is dependent on PG formation but independent of the 5-lipoxygenase pathway, and 2) thrombocytopenia and neutropenia are independent of shock or PG synthesis.

**1126** EVIDENCE FOR COMMON ANTIGENICITY IN THE PILI OF HAEMOPHILUS INFLUENZAE TYPE B (HIB). Michael E. Pichichero, Joyce Colaiace, Porter W. Anderson (Spon. by Richard A. Insel). Univ Rochester, Dept. Pediatrics, Rochester, NY.

Antisera to the pilus of a single strain of Hib (C54) were made by hyperimmunization with a pilus-enriched (p+) variant of C54 followed by absorption against a variant of C54 that was identical in encapsulation, outer membrane protein composition, and lipopolysaccharide subtype but lacked pili (p-). 4 different antisera were prepared (2 in different species of mice and 2 in guinea pigs). All 4 antisera agglutinated (aggl) the homologous C54 p+ but did not aggl C54 p-. C54 causes hemagglutination (HA) of human RBCs and adheres well to human epithelial cells (EC) (4.8 bacteria/EC) whereas the p- variant is HA- and adheres poorly (0.2/EC). Addition of antisera resulted in complete inhibition of HA and >60% reduction in C54 bacterial adherence.

9 strains isolated from CSF, blood, and mucosal surfaces were pilus-enriched and studied for cross-reactivity with the pilus of C54. 5 were HA+ with human RBCs only (like C54 and ~80% of all Hib isolates), 2 were HA+ with human and rat RBCs (like ~12% of all Hib) and 2 were HA+ with all animal and human RBCs tested (like ~8% of all Hib). Despite these HA species differences (the only type of heterogeneity found to date) the 4 antisera aggl all 9 strains when p+ but not when p-. Similarly, the antisera inhibited HA of human RBCs and adherence to EC. Thus, pili from different strains of Hib share antigenic determinant(s), and common antipilus antibodies can produce the biologically relevant effect of inhibiting bacterial adherence.

**1127** LUMBAR PUNCTURE AT THE END OF TREATMENT FOR BACTERIAL MENINGITIS: BASELINE FOR SUBSEQUENT DIAGNOSTIC LUMBAR PUNCTURE. K.R. Powell, T. Mendes, J.A. Lohr, J.O. Hendley, Department of Pediatrics, University of Virginia School of Medicine, Charlottesville, Virginia.

Cerebrospinal fluid (CSF) values at the end of successful treatment for bacterial meningitis are frequently abnormal. Performance of a lumbar puncture (LP) at the end of treatment has recently been discouraged because this LP does not identify the rare patient who will relapse. However, an LP at the end of treatment may provide critical baseline CSF values if a subsequent diagnostic LP is performed.

This retrospective study was undertaken to determine how often children were seen for an acute illness after treatment for bacterial meningitis and how frequently diagnostic LPs were done. Forty eight patients three years old or younger treated for bacterial meningitis (1977-1981) were studied. Follow-up information regarding physician visits within the two weeks following hospitalization was obtained for 44 of 48 eligible children.

LPs performed at the end of treatment had one or more abnormal values in 25 (75%) of 34 patients. Eleven (25%) of 44 children were seen by a physician for an acute illness during the two weeks after completion of treatment. A diagnostic LP was performed in four (12%) of the 33 infants under one year of age. LP results at the end of treatment were needed in the management of two of these infants.

The frequency of acute illnesses and diagnostic LPs in the two weeks after treatment of meningitis suggests the continuing need for an end-of-treatment LP to provide baseline information.