

**495** MORBIDITY AND MORTALITY OF INFANTS  $\geq$  2500GMS IN A REFERRAL NICU. A. Sola, D. Davila, C. Kapadia, M. Leitner, J. Gershanik, (Spon. by G. Gregory), Southern Baptist Hospital, Dept. of Neonatology, New Orleans

Little epidemiologic attention has been given to infants  $\geq$  2500 gms. admitted to NICU's. To determine their morbidity and mortality, we reviewed all admissions for 17 months and they represented 44% (236/545) of the admissions and 37% of all deaths. The diagnoses were: Pulmonary disease (PD) other than meconium aspiration syndrome (MAS) (32%); asphyxia (As) (22%); congenital anomalies & heart disease (CA/CHD) (21%); surgical (11%); sepsis (5%); others (9%). MAS occurred in 44% (22/50) of As infants. Mortality rate was 17% (40/236). Of the deaths, 70% were due to CA/CHD, 23% to As and 7% to sepsis. Of the 9 As deaths, all were  $>$ 42 wks. and 8 had MAS. Of 21 cases with persistent fetal circulation (PFC), 17 had As, 16 were  $>$ 42 wks and 7 (33%) died. In infants with PFC, As and MAS who were  $>$ 42 wks, mortality was 55%. Thirty four infants (14%) were  $>$ 42 wks, 9 (27%) died. Sixty seven (28%) were  $\leq$  37 wks, only 3 died (4%) & they had CA/CHD. PD other than MAS occurred in 54/67 (80%). None of the  $\leq$  37 wks. who had PD and were born by elective c-section or induction had prenatal lung maturity studies.

Morbidity and mortality remains high in this group of infants. Prevention of postmaturity and better intrapartum management should significantly decrease the number of deaths. Accurate assessment of lung maturity and gestational age, in order to avoid iatrogenic prematurity, will decrease the number of infants  $\geq$  2500 gms requiring neonatal intensive care.

**496** DESCRIPTIVE EPIDEMIOLOGY OF MALIGNANCY IN ATAXIA-TELANGIECTASIA (A-T): AN IMMUNODEFICIENCY-CANCER REGISTRY (ICR) REPORT. Beatrice D. Spector, Guy S. Perry III, John H. Kersey, Alexandra H. Filipovich, U. Minn. Med. Sch., Depts. Lab Med./Path. and Peds., Minneapolis 55455.

108 cases of cancer in patients with A-T, an autosomal-recessive disorder of neurologic, endocrine, and immunologic dysfunction were collected by the ICR worldwide. 71/108 cases (66%) developed lymphoid malignancies at a median age of 8 yrs. (range 2-45 yrs.) with a male/female ratio=1.6. When U.S. cases were compared to an age/sex matched sample from the general cancer pop. their lymphoid tumors accounted for a 10.3x proportional excess. A-T lymphomas were morphologically similar to the non-lymphoblastic types diagnosed in the general childhood pop. but different from the immunoblastic type found in other immunodeficient states. The T-cell phenotype was prominent in A-T lymphocytic leukemia-lymphoma tested (5/8, 62%) in contrast to the predominance of null cell leukemias in non-immunodeficient children. Clonal rearrangement of chromosome 14 appeared in all 3 T-cell chronic lymphatic leukemias and in 1 lymphoma. Another 20% of A-T cases (22/108) had carcinomas; female/male ratio=3.4. Liver carcinomas had a proportional excess for both females (3x) and males (4.5x), while stomach and genital tract sites were proportionately increased 70x and 4.4x in females only. Remaining patients had Hodgkin's disease (12/108, 11%) and other leukemias (3/108, 3%). Malignancy features in A-T differ from those observed in the general and other immunodeficiency populations, suggesting several host susceptibility mechanisms in this entity. (USPHS CP-43384)

**497** A NOSOCOMIAL OUTBREAK OF FATAL ADENOVIRUS TYPE 7: Richard C. Straube, Russell B. Van Dyke, Stephen A. Spector, James D. Connor, David L. Chadwick: University Hospital, Department of Pediatrics, San Diego; Children's Hospital and Health Center (CHHC), San Diego.

The CHHC has experienced, to our knowledge, the first major outbreak of adenovirus type 7 disease in a children's hospital. At least 61 hospital employees and 7 patients were involved. Patients experienced a biphasic course which consisted of croup, diarrhea, fever, exudative pharyngitis, and/or conjunctivitis which preceded an acute respiratory decompensation by 1 wk. Those patients acquiring disease were individuals with compromised airways and underlying pulmonary pathology. Mortality from overwhelming viral pneumonia was 4/6 (67%). All fatal cases grew the organism from multiple sites including lung. Widespread illness appeared among hospital employees beginning 7 days after admission of the index case. History, NP and rectal viral cultures, and serology were obtained on 336/363 (94%) of staff working during the outbreak. Conjunctivitis was reported by 61 employees (16%), which was associated with corneal infiltrates in 5 (8%). 92/336 (27%) reported diarrhea and 221/336 (66%) reported URI symptoms. Control of viral transmission was achieved only when strict isolation precautions and cohorting of infected patients was combined with extensive screening of staff, and the temporary closure of the hospital to all new admissions. While adenovirus is a frequent community pathogen, this outbreak demonstrates that nosocomial type 7 infections in patients with pulmonary compromise frequently can be fatal.

**498** COMPARATIVE HOST RESPONSES OF BLACK AND WHITE CHILDREN TO HAEMOPHILUS INFLUENZAE B MENINGITIS Amir Tejanl, Madu Rao, Vincent Ahonkai, Bohdan Dobias, R. Mahadevan, Bhim S. Nangia (Spon. by Qutub Qazi). SUNY, Downstate Medical Center, and The Methodist Hospital, Department of Pediatrics, Brooklyn, New York.

We compared host responses of a group of black and white children who developed *Haemophilus influenzae* type b meningitis. Thirty white and 30 black children, ages 2 months to 7 years, form the study group. In each group, the age, number of other siblings, duration of fever after starting therapy, initial white cell count, and morphological and chemical findings of the cerebrospinal fluid were recorded. Immunoglobulins were measured in each group by radial immunodiffusion. Anticapsular antibody was measured by radioimmunoassay in both groups. HLA antigens were determined in all patients from lymphocytes isolated from the peripheral blood by ficoll isopaque centrifugation.

The black children responded to the infection less vigorously. They had more prolonged fever ( $p < .01$ ), a lower CSF pleocytosis ( $p < .05$ ), and less IgG production ( $p < .05$ ). They produced less anticapsular antibody - 234.4 ngm/ml geometric mean titre vs. 312.3 ngm/ml for the white children. The black children had increased frequency of HLA B7 ( $p < .001$ ), and the white children an increased frequency of B12 ( $p < .05$ ). These HLA antigenic differences could not be accounted for by racial traits. Immune response regulated by Ir genes in close proximity of the B locus is thus weaker in black children and may explain the increased predilection of black children for *H. influenzae* type b meningitis.

**499** EPIDEMIOLOGICAL ASPECTS OF ROCKY MT SPOTTED FEVER (RMSF) IN N.C. 1979-80. Catherine M. Wilfert, J. Newton MacCormack, Karl Kleeman, Jane Lea Hicks, Ernest Austin, Vivian Dickinson, Elizabeth Casper, Robert Anacker, Robert Phillip, Dept. Ped., Duke Univ. Med. Ctr., Durham, NC, Dept. of Human Resources, State of N.C., Rocky Mt. Lab, Hamilton, Montana.

A prospective, case controlled, epidemiologic study of RMSF was begun in Rowan and Cabarrus Counties in July, 1979. A confirmed case has a 4 x fold rise in specific *R. rickettsii* antibodies. [indirect hemagglutination (IHA), microimmunofluorescence (MIF) or latex agglutination (LA)] or presence of IgM-MIF *R. rickettsii* antibodies. Disconfirmed cases have no detectable antibodies or stationary titers. Disconfirmed cases and case controls selected by age and neighborhood proximity have been compared to confirmed cases of RMSF. 78 suspect cases were identified in 1979 and 151 in 1980. 22 cases were confirmed in 1979 and 21 in 1980. These data produce an estimated rate of 12.4 confirmed symptomatic cases/100,000/year in Rowan and Cabarrus Counties, N.C. The 3 groups of patients did not differ in the month of onset of illness or sex. The majority of serologically confirmed cases occurred in males. Females were less likely to contract disease over 10 years of age. There is a striking preponderance of white patients. The possibility of hyperendemic foci for disease is suggested by geographical clustering of confirmed cases. There was a greater likelihood of a history of tick exposure or bite in proven cases, but it was not statistically different from the other 2 groups. Children are brought sooner for medical care with an illness than adults seeking assistance for themselves. Delay in initiation of therapy results from failure to make the diagnosis rather than from failure to seek medical care. There is no correlation of educational differences in patients or parents with delay in seeking physician assistance.

**500** EPIDEMIOLOGIC CHARACTERISTICS OF NECROTIZING ENTEROCOLITIS (NEC) IN GEORGIA. Rickey Wilson, William P. Kanto, Jr., Bryan J. McCarthy, Roger A. Feldman, Bureau of Epidemiology, CDC and Department of Pediatrics, Emory University, Atlanta, Georgia.

The widely varied institutional reports of incidence rates and fatality ratios (FR) of NEC prompted a statewide epidemiologic study of this disease. We defined NEC using the criteria of Bell (J Pediatric Surg 1978;187:1), and identified all cases of NEC occurring in Georgia residents born during 1977 and 1978. Case finding included visits to tertiary-care centers, a telephone survey of smaller nurseries with follow-up visits when necessary, and contact of intensive-care nurseries in neighboring states. Hospital-chart review identified 148 cases; 78 infants were females and 70 males. Birth-weight and rate-specific incidence rates and FR were:

Birthwt (gm)	White		Black		FR(%)	
	Rate/1000 Births	FR(%)	Rate/1000 Births	FR(%)	White	Black
501-1000	29.7	67	60.6	62	67	62
1001-1500	31.1	44	44.3	32	44	32
1501-2500	3.2	4	4.3	41	28	41
2501+	0.1	0	0.2	11	0	11

NEC rates for infants weighing less than 2500 grams were higher for blacks than whites ( $p < .005$ ). Weight-specific FR were not affected by transport. Weight-specific incidence rates and FR did not vary significantly among 6 tertiary centers. NEC deaths represented 15% of all post-hemodomaal deaths of infants weighing less than 1500 grams. Further evaluation of NEC in populations of different socioeconomic and ethnic makeup is needed.