

**73** NEONATAL BEHAVIOR IN INFANTS WITH IMPAIRED FETAL GROWTH. B. Lester, C. Garcia-Coll, M. Valcarcel, J. Hoffman, T. B. Brazelton.

Infants with impaired fetal growth (IFG) (N=15) were compared with normally grown infants (N=22) on the Brazelton scale. IFG infants were classified into proportionate (N=8) or disproportionate (N=7) growth retarded based on weight for age, length for age, and weight for length (ponderal index, PI) standards. The Brazelton scale was administered on the 2nd day of life with newly developed supplementary scales for at-risk infants. The results showed that IFG infants performed significantly more poorly on the orientation ( $p < .008$ ) and motor ( $p < .006$ ) clusters and on 13 of the 18 new supplementary items (all  $p$ 's  $< .01$ ). IFG infants showed a greater imbalance of muscle tone, were less likely to maintain an alert state and when alert were less responsive to stimulation. They were fragile infants, stressed by the exam, requiring a high degree of input from the examiner. Analyses run to compare the proportionate vs. disproportionate IFG groups by controlling for differences due to the PI showed that the PI uniquely affected the infant's state ( $p < .01$ ) and attentional ( $p < .01$ ) capacities. This study shows differences in neonatal behavior due to IFG and suggests that early nutritional insult (proportionate growth retardation) affects different behavioral capacities than later insult (disproportionate growth retardation). The study also supports the use of supplementary Brazelton scale items in the behavioral assessment of the infant at risk.

**74** BRAZELTON SCALE PERFORMANCE AND 18 MONTH OUTCOME IN TERM AND PRETERM INFANTS. Barry M. Lester, Joel Hoffman, T. Berry Brazelton.

The purpose of this study was to test a method developed to predict developmental outcome from repeated measures of the Brazelton Neonatal Behavioral Assessment Scale. It was hypothesized that patterns of change in neonatal behavior during the first month of life measure neonatal adaptation to the postnatal environment and relate to developmental outcome in the second year of life. Twenty term and 20 preterm infants were assessed with the Brazelton scale at term and 2 and 4 weeks post term. Individual profile curves were measured on parameters such as level, velocity, and acceleration of behavioral performance. The profile curve parameters were correlated with the Bayley mental developmental index (MDI) at 18 months of age. The Brazelton scale curve parameters explained 49% of the variance in MDI scores in the term group ( $r = .70, p < .01$ ) and 63% of MDI scores in the preterm group ( $r = .79, p < .01$ ). The results suggest that patterns of change in Brazelton scale performance during the first month post term are related to subsequent mental development and provide evidence for the predictive validity of the Brazelton scale.

**75** CLINICIANS' ASSESSMENTS OF FAMILIES WITH A CHRONICALLY ILL CHILD. John M. Leventhal, Barbara F. Sabbeth, Eleanor B. Emmons, Patricia B. Davis, Sylvia J. Lavietes, & William V. Tamborlane. Yale Univ. Sch. of Med., Yale-New Haven Hosp., Dept. of Ped., New Haven.

To examine how often specialists caring for chronically ill children detect serious psychosocial problems in the family, parents of 23 children (ages 5-11 yrs.) with diabetes mellitus who regularly attended the diabetes clinic were interviewed at home by psychological researchers previously unknown to the family. Questions were designed to detect serious marital problems (e.g., considering divorce) and serious problems in the parent-child relationship (PCR) (e.g., excessive underinvolvement by a parent). Problems were rated as: definite, possible, or absent. Parental responses were compared with the clinic staff's (physician, nurse practitioner, and social worker) knowledge of marital and PCR problems. Knowledge was assessed by an interviewer unaware of the parental responses.

Clinicians and researchers agreed in 61% of the assessments of the marriages; clinicians noted that 9% of families had a definite marital problem vs. 26% reported to the researchers. Of the 6 families reporting a definite problem, 2 were also noted by the clinicians. Agreement in the assessments of the PCR occurred in only 30% of cases. A definite problem was noted in 9% of families by clinicians and 17% by researchers.

Clinicians appear to underestimate the extent of psychosocial problems in these families. This may be due to the family's need to present itself as normal in the medical setting, as well as the clinician's style of offering services.

**76** A STATEWIDE SYSTEM FOR PERINATAL INFORMATION. A. Levkoff, D. Purohit, Y. Michel, T. Austin, D. Wells, G. Ferlauto, J. Harlen, S. Elhassani, H. Rao, C. Miller. (Spon. by M. Westphal), Medical University of SC Consortium, Dept of Peds and Biometry, Charleston, SC.

A Statewide Perinatal Information System (SPINS) was developed in 1980, through the cooperation of South Carolina's twelve neonatologists and a grant from the State Department of Health and Environmental Control. Using a Prime 550 computer and PSTAT, Inc. software package, SPINS collects 75 maternal and 222 neonatal items of information on all mother-infant pairs admitted to the five Level III Centers. The system collects information on infants admitted to normal newborn, intermediate and intensive care nurseries (ICN) of these five referral centers. In addition to vital statistics, areas covered are maternal history, labor, delivery and neonatal diagnoses, procedures, outcome. The number of infants entered into the system in 1982 was 14,417 of which 1749 were ICN admissions. SPINS has generated data for 1-Education: monthly ob-ped conference for perinatal outcome, 2-Quality Control: statistics of outcome by birth weight, length of hospital stay and average daily weight gain, 3-Health Costs: increased State Medicaid coverage of high risk neonates based on average length of hospital stay, 4-Research: changing bed requirements for care of very low birth weight infants. The personnel required statewide are five data collectors working 3/4 time, one full-time data entry clerk, and one full-time data analyst. The total yearly cost is approximately \$100,000; \$87,000 for salaries and \$13,000 for computer time.

**77** MORTALITY FROM LIVER DISEASE IN PEDIATRICS: IMPLICATIONS FOR HEPATIC TRANSPLANTATION PROGRAMS. J.D. Lloyd-Still, Dept. of Ped., Children's Memorial Hospital, Chicago, IL.

A 1983 NIH Consensus Conference concluded that liver transplantation was no longer an experimental procedure and suggested further systematic studies. We analyzed our experience on fulminant hepatic failure 2° to acute and chronic liver disease between 1976-83. Information was obtained from 1) analysis of all deaths for 1° or 2° hepatic failure; deaths from cystic fibrosis (CF) and congenital heart disease (CHD) were included for comparison; 2) surgical procedures with hepatic explorations; 3) pts. followed in the Liver Clinic. 76 pts. died with fulminant hepatic failure; in 4, death was 2° to other disease. In 28 hepatic failure was acute, while 48 had preexisting disease. Six groups were identified. I. biliary atresia (BA) (20) II. metabolic (total 18, idiopathic 5, tyrosinosis 3,  $\alpha_1$  antitrypsin deficiency 2) III. Reyes (7) IV. infectious (total 14, HBSAg 4, idiopathic 7) V. cholestatic syndromes (total 11, familial 7, total parenteral nutrition 3) VI. miscellaneous (total 6, tumors 3). 36/76 (64%) of pts. died in the first year of life. Despite portoenterostomy for BA, 2/3 succumbed before weight was adequate for transplantation. Comparative mortality averaged: CF 4/yr., liver 9/yr., CHD 42/yr. 8 pts. with hepatic failure were referred for transplantation and 6 are alive. Conclusions: 1. Liver disease is an important cause of mortality. 2. 64% die in infancy before they could undergo transplantation. 3. Major indications for transplantation include BA, familial cholestatic syndromes, and certain metabolic disorders.

**78** EARLY NEUROLOGICAL PREDICTORS OF ONE-YEAR OUTCOME IN BIRTH ASPHYXIATED INFANTS. Evelyn G. Lipper, Theresa Voorhies, Gail Ross, Peter A.M. Auld, Robert Vanucci. Cornell University Medical College, The New York Hospital, Dept. of Pediatrics, N.Y.

Perinatal asphyxia remains a leading cause of mortality and morbidity in the term neonate. Although certain clinical features have been associated with poor outcome in infants with asphyxia, it has been difficult to accurately identify in the neonatal period those infants who will have subsequent mental and motor handicap.

In this study, 34 consecutive term infants with birth asphyxia who were admitted to a neonatal intensive care unit received a detailed neurological examination during the first week of life. Eighteen also underwent CT scans in the first 72 hours. Based on these respective examinations, the authors developed a neonatal post-asphyxial neurological examination score (PAS) and a CT ratio reflective of the degree of hypodense areas of the brain. At one year of age, the surviving 28 infants received a Bayley examination, a measure of head circumference, and the Amiel-Tison neurological examination on which they were rated as normal, suspect, or abnormal.

Results showed that the PAS and CT ratio measures were significantly related to each other ( $p < .01$ ) and that both of these measures were significantly correlated with mental and motor scores on the Bayley, head circumference, and neurologic rating at one year ( $r$ 's ranged from .70 to .83;  $p$ 's from  $< .05$  to  $< .005$ ). Thus, PAS and CT ratio are new measures which appear to be effective in predicting neurodevelopmental outcome of full-term, birth asphyxiated infants at one year of age.