

37 CONGENITAL RUBELLA CHILDREN AT ADOLESCENCE: DEVELOPMENTAL STATUS. Murdina M. Desmond, Geraldine W. Wilson, Mary A. Murphy, Eileen S. Fisher, Susan A. Thurber, Evelyn M. Kroulik. Baylor College of Medicine, Texas Children's Hospital, Department of Pediatrics, Houston.

The developmental status of 53 adolescents with congenital rubella syndrome was surveyed at 16-18 years. The aim was to determine current status and compare neurodevelopmental functioning with that of 18 months. During infancy the majority had multisystem disorders. At 16-18 yrs. many earlier medical problems are no longer of functional importance while neurosensory and developmental problems remain. The majority (77%) are multihandicapped. Twenty-five (47%) show average intelligence, 12 (25%) low average, and 15 (28%) are retarded. Eight scored higher than at 18 mos., eleven lower, but none went from average to retarded or the reverse. The number with cerebral palsy and hyperkinesia has decreased. Behavioral disturbances continue in 11. The number with proven hearing loss has increased (23-49). Twelve considered to hear normally at 18 mos., and 13 of 14 considered "suspect" are now hearing impaired. Seven progressed in severity, one improved. Children with hearing loss were initially entered into oral programs designed to teach lipreading and speech for communication. At 16-18 yrs, oral speech/lipreading remains the predominant mode only for those children whose hearing loss was diagnosed after 18 mos, is unilateral or mild-moderate in degree. Ninety percent of children (18 of 20) with severe/profound loss diagnosed prior to 18 mos failed to develop adequate speech/lipreading skills and now communicate in the manual mode. Educational implications of these findings will be discussed.

38 RELATIONSHIP BETWEEN EARLY DEVELOPMENTAL OUTCOME AND HOME ENVIRONMENT IN HIGH RISK (HR) INFANTS. Sharon Dowling, Robert Lasky, Charles Rosenfeld. Dept. of Pediatrics, Southwestern Med. Sch., Dallas, Texas.

Data descriptive of the relationship between early developmental outcome and home environment are available from a population of normal infants; however, this has not been studied in a population of very HR infants. We examined this relationship in a sample of 30 consecutive infants taken from a clinic population comprised of infants meeting one or more of the following criteria: birth weight <1500 gms., ventilator therapy, major surgical therapy. Mean birth weight of the sample was 1479±692(SD)gm (range 625-3180) and gestational age 32±4wk. 83% required ventilator therapy in at least the first week of life. At 9 to 18 calendar months of age (6 to 15 months corrected age) the Bayley Scales of Infant Development (BSID), consisting of 2 indices, the Mental Developmental Index (MDI) and the Psychomotor Developmental Index (PDI), were administered during a routine clinic visit. Within one week, a home visit was made and the HOME Inventory, comprised of a 45 yes/no item questionnaire and divided into 6 subscales, was used to assess the home environment. We found no correlation between either the MDI or PDI and the corresponding total HOME score. However, a significant correlation was found between the PDI and the 3rd Subscale of the HOME ($r=.43, p=.01$); and between the maternal educational levels and HOME scores ($r=.46, p=.01$). There appears to be no predicability of developmental outcome based on home assessment in HR infants at an early age of assessment, findings consistent with non-HR infants.

39 BIRTH ASPHYXIA IN THE VERY LOW BIRTH WEIGHT INFANT (VLBW <1500 GRAMS): IMMEDIATE AND LONGITUDINAL (2 years) OUTCOME. John M. Driscoll, Mary E. Steir, Yvonne T. Driscoll, Henry Rey, Joseph Fleiss, Marianne Warguska, and Amy Adler. (Spon. by L. Stanley James), College of Physicians & Surgeons, Columbia Univ., Presbyterian Hosp. in the City of NY, Dept. of Pediatrics, New York

The relationship of birth asphyxia (BA) to neonatal mortality & neurologic & developmental outcome at 2 yrs. of age was investigated in a large prospective study of infants with BW <1500 grams (N=525). BA was defined by an Apgar score of <3 at one minute & <6 at 5 minutes. Multivariate analysis of the data included the following variables: BW, sex, socio-economic status (SES), BA, method of delivery, apnea, RDS & mechanical ventilation (MV). BA was significantly correlated with a higher neonatal mortality, more severe RDS, a greater need for MV, & neurologic & developmental outcome at 2 yrs. Indeed, BA was the only medical variable that was related to the mental development index (MDI) of the Bayley Scales. SES & sex were the most powerful correlates of MDI at 2 yrs, while none of the psycho-social variables were associated with neurologic outcome at 2 yrs. This study indicates the importance of BA on the immediate & long term outcome of the VLBW infant. It also provides evidence that it is inappropriate to assign an outcome index based on combining neurologic and developmental outcome. By 2 yrs. it appears that psycho-social & medical factors exert their influence relatively independently on separate systems. Medical factors impact most directly on neurologic outcome, while psycho-social variables influence developmental status. These 2 systems, while interactive, may be more independent than was thought.

40 DYNAMIC INTERACTIONS: A COMPUTER MODEL OF CHILD ABUSE. Heidi M. Feldman & James L. McClelland, Univ. of Pittsburgh, Dept. of Pediatrics (Spon. by Thomas K. Oliver, Jr.)

A computer simulation model, Dynamic Interactions, simulates the emergence of child abuse from a system of interacting individual, family and social variables. Each variable has a value, determined by the simultaneous excitatory and inhibitory influences of other variables, which can be converted to a probability to compare the relative strength of parental violence (PV) versus parental non-violence (PNV) (eg, non-violent discipline). The variables and interactions between them are based on research on pairwise interactions of relevant factors. The literature shows that PV increases a child's negative behaviors (CNB) (eg, hyperactivity, social withdrawal). In the model PV has an excitatory effect on the CNB. The literature suggests that a CNB can evoke PV. In the model the CNB has a simultaneous excitatory effect on PV. Similarly PNV and the child's positive behaviors (affection, affiliation) have reciprocal excitatory influences. Social variables including stress, supports and school experiences, and the child's health all have mutually excitatory interactions with parental or child variables. The model considers all interactions simultaneously in simulations of real life situations and replicates findings on child abuse. There are no necessary or sufficient causes. Variables (eg, stress) have greater impact in the context of other variables (child's illness) and block the impact of other factors (social support). The system develops positive feedback loops which stabilize patterns of PV. Adequate and dysfunctional parenting can be understood as arising from identical variables but differing in the particular values for the variables.

41 IDENTIFICATION AND TREATMENT OF EARLY EXPRESSIVE LANGUAGE DELAY. Janet E. Fischel and Grover J. Whitehurst (Spon. by John C. Partin) State Univ. of New York at Stony Brook School of Medicine, Dept. of Pediatrics, Stony Brook.

Expressive language delay (ELD) is a developmental disorder characterized by substantial delay in expressive language compared with receptive language and IQ. Prior study of the problem yields a prevalence estimate of 3% of preschool children and substantial negative sequelae in school performance and psychological health. This paper focuses on the initial 4 children (X age = 2.5 yrs) in a longitudinal study of the etiology and treatment of ELD. Each child had normal receptive and nonverbal intellectual skills for age but extremely retarded expressive skills (<20 words). Each child was studied for a 3 to 4 month treatment in which a baseline period of home observation was followed by 7 assignments given to parents in bi-weekly sessions and administered by the parents at home. Treatment progress was monitored by novel and powerful analyses of child-parent verbal interactions based on computer analysis of home tape-recordings. Findings included development of age appropriate expressive function within 3 months for all subjects (expressive vocabulary X IQ = 95.2), and highly significant pre-post differences. Time-series analyses demonstrated that improvement was caused by treatment procedures. Baseline verbal interaction analyses revealed high use of inefficient strategies to elicit child language which were markedly reduced by treatment instructions. ELD is therefore treatable and substantially remediable using a short parent-based therapy program.

42 GUIDELINES FOR GRADE RETENTION. Jeanne B. Funk, Jeanne S. Drenner, Elizabeth S. Ruppert, and Steven G. Jurs (Spon. by Margaret G. Robinson).

Parents often consult pediatricians for advice about grade retention. Schools recommend retention to provide an additional year for mastery by simple repetition. Parents emphasize, and schools minimize, retention's negative impact. There has, however, been little research to guide decision-making.

A series of studies have been undertaken in a cooperative effort between the Medical College of Ohio and a local school system. The first study of 1,381 students identified the proportion of elementary students being retained (10%). In teachers' perceptions, the majority (87%) benefitted, but 59% also required specialized education. The next study compared retainees with promoted children from the lower third of the class. Factor analyses of teacher questionnaire responses identified 4 factors on which retainees differed: attention span/work behaviors, social adjustment, perceptual-motor, and comprehension/memory. Previous research indicates that many variables within these factors indicate learning disability. Therefore, some students were retained for problems simple retention cannot correct.

Our conclusion is that children with attentional deficits, fine motor problems, and "immaturity" are at high risk for inappropriate retention. Parents should insist on a detailed educational evaluation prior to a retention conference. If learning disability characteristics are identified, the child should be promoted with services. Parents may need medical support to appropriately oppose retention.