

●668

DIAGNOSTIC EFFICACY OF THE TOTAL PERIPHERAL WBC COUNT IN CHILDREN SUSPECTED OF CNS INFECTION. Robert M. Lembo, David H. Rubin, Paul L. McCarthy, Yale University, Yale-New Haven Hospital, New Haven, and Case-Western Reserve University, Cleveland Metropolitan General Hospital, Department of Pediatrics, Cleveland.

The total peripheral white blood cell count (TPWBC) is reported to be a reliable indicator of bacterial infection. To evaluate its efficacy in the diagnosis of bacterial meningitis, we reviewed CBCs from 707 of 735 consecutive outpatients undergoing an LP on clinical suspicion of underlying CNS infection at Yale-New Haven (n=343) and Cleveland Metropolitan General Hospitals (n=364).

The 26 children with bacterial meningitis (BM) had a median TPWBC not significantly different from the 66 children with aseptic meningitis, or the 568 children with other illnesses (10.8 vs 11.0 and 11.6  $\times 10^3$ , p>.05), but significantly less than the median TPWBC of 47 children with an extracranial bacterial infection (EBI) [10.8 vs 17.9  $\times 10^3$ , p=.005]. Findings remained unchanged when the TPWBC distributions were adjusted for differences in age, temperature and presence of bacteremia among patients. Regarding bacteremia, the median TPWBC among patients with BM was significantly lower than that among patients with EBI (p=.007). Patients with BM and H.influenzae bacteremia had significantly lower median TPWBC than patients with EBI and H.influenzae bacteremia (p=.01). Logistic regression analysis demonstrated that the TPWBC alone was a poor predictor of BM and added no additional predictive power when combined with the results of the routine CSF examination.

We conclude that the TPWBC is of limited value to clinicians when assessing the risk of bacterial meningitis in children suspected of CNS infection, and is of no value in differentiating septic from an aseptic CSF pleocytosis.

ASSESSMENT OF SCHOOL READINESS IN SICKLE CELL CHILDREN  
Cristina Chua Lim, Gerald E. McCleary, Bryon C. Machen

† 669

(Spon. by Robert C. Boerth) Depts. of Pediatrics, Neurology and Radiology, University of South Alabama College of Medicine, Mobile, Alabama.

Patients with sickle cell disease express a myriad of clinical signs and symptoms to varying degrees which affect their lifestyle and academic performance. Certain psycho-educational and psycho-social factors have been shown to influence the academic achievement of sickle cell patients, but no one has investigated the potential effects of pre-school development. We examined 5 children with sickle cell disease ages 4-6 and 5 age, sex and race matched controls for school readiness using the PEER (Pediatric Examination of Educational Readiness). The PEER assesses a child's performance in such areas of developmental attainment as visual input, verbal output, etc. The child's selective attention, adaptive behavior and processing efficiency were also measured. The sickle cell group scored significantly lower than their normal counterparts (p<0.025, t-test for paired variates) particularly in the areas of visual motor integration, motor sequential tasks, selective attention and processing efficiency. Four of the children with sickle cell disease were also tested with a standardized psychometric test (McCarthy Scales of Children's Abilities). There was a good correlation (r=0.8) between the PEER scores and the perceptual/performance component of the McCarthy Scales. Magnetic resonance imaging studies performed on 3 of the children with sickle cell disease for the detection of cerebral vascular accidents revealed no infarctions. These preliminary studies show that sickle cell children are developmentally less ready to enter school and this may contribute to their future academic underachievement.

●670

HEALTH IN THE YEAR FOLLOWING DELIVERY AMONG LOW-INCOME WOMEN. Marie C. McCormick, J. Brooks-Gunn, Thomasina Shorter, John H. Holmes, Claudina Y. Wallace, Margaret E. Heagarty. Children's Hospital of Philadelphia, Department of Pediatrics, Philadelphia; Educational Testing Service, Princeton; Harlem Hospital Medical Center, Department of Pediatrics, New York.

In the past, childbearing was associated with substantial morbidity. Much of this disability has been markedly reduced through modern obstetric management. Little current empirical evidence addresses this question, however, especially for low-income women who may be more vulnerable to poor health. Among a cohort of 365 Central Harlem women who were interviewed when their children were an average of 12 months of age, 10% had been hospitalized since delivery, and 12% rated their health as only fair or poor. Women with these indicators of poor health also scored higher on a standardized mental health inventory, indicating increased psychological distress, although they were not more likely to have experienced a recent stressful event or less likely to have social support than healthier women. Compared to the infants of women who had not been hospitalized or who rated their own health as good to excellent, the infants of women with poor health were twice as likely to have been rehospitalized since birth, twice as likely to have been low birthweight, and twice as likely to be reported as behind in their immunizations, although their mothers did not consider these infants to be in poorer health than other infants. We conclude that a substantial proportion of low-income women continue to experience poor health in the year after delivery, and that this may impair their ability to deal with the disproportionately higher health needs of their infants.

† 671

ONLINE SEARCHING OF MEDICAL LITERATURE, James A. Menke, Richard E. McCleod, Spon. by Grant Morrow, III. Ohio State University, Children's Hospital, Department of Pediatrics, Columbus, Oh.

Prior to offering direct access to computer-assisted searches of the medical literature (MEDLINE) by faculty of the Department of Pediatrics, eight faculty were selected to have initial access to an online service. The faculty selection was based on an expressed interest in computers and doing online searching. 2/8 faculty were NLM certified physician searchers (EF). The others were inexperienced (IF). 4/8 participated in a previous study looking at resident usage of online searching. All were given a disk based tutorial on online searching as training for this computer service. Data, including duration and time of day of online session, cost per session, and search characteristics were collected over a 7 month period. At the end of the trial period, a questionnaire was administered to determine how and why the searches were done and user satisfaction. The number of online sessions for EF was 170 and IF was 166. The mean duration of the online session was 0.20 hr for EF and 0.22 hr for IF. The mean cost of a session was \$6.57 for EF and \$7.87 for IF. 75% of searches were done from 6am-6pm and 25% from 6pm-6am. The most frequent motivation for searching was patient care followed by research, teaching, and manuscript preparation. 6/8 faculty were satisfied with their search results 90% of the time. 5/8 faculty felt their searches were more valuable than those obtained from the medical research librarian. We conclude that physician searching of MEDLINE is valuable and can be done at a reasonable cost.

ATAXIC CEREBRAL PALSY. A HETEROGENEOUS CONDITION WITH INTERACTION BETWEEN EARLY PRENATAL AND LATER EVENTS. Geoffrey Miller (Spon. by Judith G. Hall) University of British Columbia, B.C.'s Children's Hospital, Department of Paediatrics, Vancouver, B.C.

672

In ataxic cerebral palsy (CP) early prenatal causes are probably of the utmost importance. This supposition was tested by examining 36 patients, older than 5 years, with ataxic CP for minor congenital anomalies (MCAs). In a control population (n=100) none had more than 4 MCAs, and thus a number greater than this was taken as significant. 44 MCAs were sought, which were quantifiable or very apparent. As familial factors also affect their expression, a comparison was also made with the direct family. Other factors were also sought which might indicate the cause of the CNS damage. 78% (28/36) had strong indications of an early prenatal origin as judged by an increase in MCAs or a monogenic inheritance pattern. In 50% of these (14/28) later events occurred which might have been considered causative, e.g. 43% (6/14) required resuscitation after birth, 29% (4/14) had failed or difficult external cephalic versions, and 29% (4/14) were of less than 35 weeks gestation. Those causes associated with significant past natal events such as encephalitis and postoperative collapse did not have a significant increase in MCAs. These findings add support to the concept that early prenatal events may contribute to later adverse conditions which cause brain injury.

●673

A CLINICAL TRIAL OF PHYSICAL THERAPY (PT) IN SPASTIC DIPLEGIA. E. B. Palmer, B. K. Shapiro, R. C. Wachtel, J. Hiller, M. C. Allen, S. Harryman, L. Tislenko, C. Meiner, A. J. Capute. The Johns Hopkins Medical Institutions, Departments of Pediatrics and Epidemiology, The Kennedy Institute, Baltimore MD.

Forty-eight infants 12-19 months of age with mild to severe spastic diplegia were randomly assigned to either 12 months of neurodevelopmental PT (Group PT:PT, N=25) or 6 months of Infant stimulation (IS) followed by 6 months of PT (Group IS:PT, N=23). No motor or mental intergroup differences were seen at baseline. Motor outcome assessed by masked observers after 6 and 12 months of therapy included motor quotient (MoQ) derived from the Bayley Scales and observation of walking. Also, parents reported age of attainment of walking.

Measure	Groups at Baseline		at 6 Months		at 12 Months	
	PT:PT	IS:PT	PT:PT	IS:PT	PT:PT	IS:PT
MoQ	53.0	53.0	49.1	58.1	47.9	62.2 *
%walking	0	0	12%	35%	36%	73% *

Group differences by Student's t or Chi square: \* p<0.05

Time-dependent analysis of parent reports showed earlier walking in Group IS:PT (p=0.01). Stepwise multiple regressions identified MoQ at enrollment as the greatest contributor to MoQ after 6 and 12 months' treatment (p<0.001). IS during the first 6 months also contributed (p<0.05 for 6 month MoQ, p<0.01 for 12 month MoQ). Mental development did not contribute to MoQ. Total variance explained: 6 months 42%, 12 months 50%.

In these infants with spastic diplegia, 6 months of PT, compared to similarly intense IS, did not improve motor outcome. Earlier applied PT offered no motor advantage over later PT. MoQ prior to treatment was the best indicator of short term motor outcome.