

years of age, growth slows down, the tongue enlarges and a lumbar kyphosis and prominent forehead develop. Based on the findings in this study, overall intellectual functioning was low but showed no evidence of progressive deterioration except for receptive language skills.

#### BRAINSTEM AUDITORY RESPONSE TEST

##### BAER IN HIGH RISK INFANTS

Brainstem auditory responses (BAER) performed on 667 high risk infants from an infant special care unit were evaluated at the Department of Otolaryngology, University of Texas Medical Branch, Galveston, Texas. Infants who failed the test were classified into two groups; those who failed at 30 dB hearing level and those who failed at 45 dB hearing level. At follow-up examination in one, three, or six months, 8 (1.2%) had severe sensorineural hearing impairments (since only 50% returned for follow-up, 2.4% was a more accurate incidence). Conductive hearing loss was found in 15.7% (17/108) of those who passed 30 dB level and in 34.3% (12/34) of those who failed. The use of BAER testing at levels less than 45 dB permitted detection of middle ear disorders. All of the infants who failed at 45 dB hearing level and had abnormal results at the 3-4 month follow-up examination had severe sensorineural or moderate to severe mixed hearing losses. For the group that failed at 30 dB hearing level and were abnormal at follow-up, 80% had conductive hearing disorders and 20% had mild sensorineural hearing impairments. Infants enrolled in a parent-infant program for hearing impairment by 6 months of age were referred from the BAER program. (Kramer S J et al. Auditory brainstem responses and clinical follow-up of high-risk infants. Pediatrics March 1989; 83:385-392).

COMMENT. The brainstem auditory evoked response test (BAER) is effective in the early detection of hearing impairments in high risk neonates, and the degree and type of hearing loss may be predicted. However, the children who were referred to the BAER program represented only 31% of the total number of parent-infant program children with congenital hearing impairment and only 50% of the children with multiple handicaps. Some of the hearing impaired children entering the parent-infant program at this center during the period of the study were referred from sources other than the BAER program and were much older when enrolled. An infant hearing assessment program for only high risk infants would fail to identify approximately one-half of hearing impaired children.

##### TAURINE AND BAER MATURATION

A blinded randomized trial of taurine supplementation of preterm infants was conducted at the Department of Pediatrics, University of Texas Southwestern Medical Center, Dallas, and Ross Laboratories, Columbus, Ohio. Infants who received taurine supplementation had more mature brainstem auditory evoked responses with a reduction in the interval between stimulus and response at two different stimulation

rates. Neurobehavioral development was similar in the supplemented and nonsupplemented groups and there were no differences in weight, length and head circumference in the two groups. (Tyson JE et al. Randomized trial of taurine supplementation for infants less than 1300 gram birth weight: Effect on auditory brainstem evoked responses. Pediatrics Mar 1989; 83:406-415).

COMMENT. There had been reports in the literature that taurine deficiency retarded growth of primates and caused abnormalities in the electroretinograms in infants. The present study failed to show an effect of taurine deficiency or supplementation on weight gain, but maturation of auditory brainstem evoked responses (BAER) was delayed in preterm infants who were fed taurine deficient diets. Nutritional needs of infants may be evaluated by methods other than clinical signs and growth measures. New approaches such as the BAER to studies of amino acid requirements may provide correlation between maturation of electrophysiological responses, diet and metabolism of the brain.

#### ELECTROENCEPHALOGRAPHY

##### EEG IN PRE-SHUNT HYDROCEPHALUS

The EEG findings in 105 hydrocephalic children with proven ventriculomegaly and increased intracranial pressure are reported prior to initial shunt treatment in the Department of Pediatrics, University of Oulu, Finland. Abnormal EEGs were seen in 98%. Paroxysmal slow wave activity, generalized or posterior, was present in 37 (35%) recordings and focal slow waves in 28 (27%) patients. Spike or sharp wave activity was recorded focally or generally in 45 (43%). The prevalence of spikes and sharp waves became less with increasing age and only generalized spikes occurred after seven years of age. The etiologies of the hydrocephalus were perinatal hemorrhage (20), infection (10), tumor (11), and malformations (64). Of 45 patients studied between one month and one year of age five had hypsarrhythmia. (Saukkonen A. Electroencephalographic findings in hydrocephalic children prior to initial shunting. Child's Nerv Syst Dec 1988; 4:339-343).

COMMENT. It is important to study the electroencephalogram of infants with hydrocephalus prior to shunting so that effects of increased intracranial pressure and malformations can be distinguished from those secondary to the shunt and possible infection. Spikes and sharp waves in the EEG of hydrocephalics are predictive of the prognosis and the probable occurrence of epilepsy. (Watanabe K et al. Clin electroencephalogr 1984; 15:22).

##### EEG AND SLIT VENTRICLE SYNDROME (SLV)

The EEG changes and the frequency and type of epilepsy in patients with slit ventricles has been analyzed in 113 shunt-treated hydrocephalic children reported from the Department of Pediatrics, University of Oulu,