CEREBRO-HEPATO-RENAL (ZELLWEGER) SYNDROME

Selective neuronal lipidosis and neuroaxonal dystrophy of the dorsal nucleus of Clarke and lateral cuneate nucleus were the neuropathological findings in 3 males with Zellweger syndrome examined at the Medical Unit S Carolina, Charleston, SC, the John F. Kennedy Institute, Johns Hopkins Univ, Baltimore, MD, and the Philadelphia Children's Hosp. Large amounts of abnormal cholesterol esters containing saturated and monosaturated very long-chain fatty acids were demonstrated in the striated neurons of the dorsal thoracic cord. The CNS neurons of these patients manifested the same morphological alteration as adrenocortical cells of adreno-leukodystrophy, and many of the striated neurons were degenerate or necrotic. It is suggested that a more generalized defect in neuronal fatty acid metabolism may explain the neuronal migration defects characteristic of Zellweger syndrome. These consist of pachygyria, micropolygyria and cerebral and cerebellar heterotopia. (Powers JM et al. Neuronal lipidosis and neuroaxonal dystrophy in cerebro-hepato-renal (Zellweger) syndrome. Acta Neuropathol (Berl) 1987:73:333-343).

COMMENT. CHR (Zellweger) syndrome, transmitted as an autosomal recessive, is invariably fatal within a few months after birth. Prenatal diagnosis may be made by amniocentesis and the production of very-long-chain fatty acids (VLCFA) from cultured amniocytes (Lancet 1984:1:1234. Mosher AE et al. N Engl J Med 1984:310:1141). The determination of VLCFA in the blood permits prompt diagnostic confirmation of CHRS in the infant with dysmorphic facial and skull features, liver enlargement and fibrosis, renal cysts, stippled calcifications of the patellae, Brushfield's spots, optic atrophy and retinal pigmentation. Zellweger syndrome is a peroxisomal disorder. The lacking peroxisomes are cytoplasmic organelles containing oxidases and catalase and are involved in metabolism of hydrogen peroxide, fatty acids and bile acids.

SEIZURE DISORDERS

DIAZEPAM SENSITIVITY AND INTRACTABLE SEIZURES

The benzodiazepine sensitivity test, an intravenous bolus of diazepam (0.2 mg/kg) under EEG control, was used in 40 children with intractable seizure disorders treated in the Paediatric Neurology Service and the Dept Neurology and Clinical Neurophysiology, Royal Hospital for Sick Children, Edinburgh. The etiology and clinical patterns of seizures were heterogeneous, 50% symptomatic of various causes and 63% with a mixed seizure disorder, atypical absences, myoclonic and drop or atonic seizures predominating. EEG abnormalities were severe and persistent. Many different drugs had been used but 29 (73%) patients had not received benzodiazepines.

A positive effect, defined as abolition of abnormal EEG activity often with appearance of fast activity, was obtained in 53% of the total group. The response was negative in 6 of 7 patients in non-convulsive status and in 7 of 9 patients with Lennox Gastaut syndrome, 2 showing exacerbations of EEG paroxysms and clinical seizures. All 5 with focal spikes responded whereas only 3 of 6 with hypsarrhythmia showed improvement in the EEG.

Of 32 patients treated subsequently with long-term oral benzodiazepines, 21 (66%) showed improvement in seizure control. Among