

but therapeutic serum concentrations of carbamazepine (Thompson PJ, Trimble MR. J Neurol Neurosurg Psychiatry 1983; 46:227-233). It has been suggested that the so-called "psychotropic" effect of carbamazepine reported in cross over antiepileptic drug studies may have been related to the discontinuance of previous drugs rather than a positive carbamazepine effect and that cross over studies are potentially open to error by practice effects (Schain RJ et al. Neurology 1977; 27:476-480). The present study confirms the importance of comprehensive neuropsychological assessments to evaluate possible adverse cognitive side effects of antiepileptic drugs in children particularly at higher dose levels. The theoretical advantages of monotherapy, notwithstanding, the tendency to rigid persistence of large and potentially toxic doses and delay in change to alternative therapy may result in subtle deficits in learning that might be avoided by selective combination therapies at lower dose levels.

BEHAVIOR AND LEARNING DISABILITIES

HARMFUL EFFECTS OF LEAD ON LEARNING

Members of the Depts. Community Medicine, Education, Geology, and Med. Statistics Unit, Univ. Edinburgh, have investigated the effect of blood-lead on cognitive ability and educational attainment in a sample of 855 boys and girls aged 6-9 years from 18 primary schools in central Edinburgh. The mean blood-lead level was 10.4 ug/dl. Multiple regression analyses of individual test scores showed a significant negative relation between blood-lead and British Ability Scales combined scores, number skills, and word reading, with 33 possible variables accounted for. The dose-response relation between blood-lead and test scores showed no evidence of a threshold or safe level. It was concluded that lead at low levels of exposure probably has a small harmful effect on the performance of children in cognitive ability and attainment tests. (Fulton M et al. Lancet 1987; 1:1221).

COMMENT: This finding is in agreement with that of a previous study in the USA (Needleman et al. N Engl J Med 1979; 300:689-95) showing lead-related deficits in neuropsychological and classroom performance of children with elevated dentine lead levels. Exposure levels in the UK were lower than in the US study. Water and dust were the main sources of lead, attributed to a plumbosolvent water supply and lead plumbing in Edinburgh. Reports of research (1979-83) on the neuropsychological effects of lead in children are reviewed by the Medical Research Council, London, 1984.

A case of schizophrenic-like psychosis is an unusual manifestation of moderate lead intoxication (blood level of 60 ug/dl) reported in a 14 year old boy who had sniffed gasoline for 3 months. He was treated at Duke Univ Med Cntr, Durham, N Carolina, using a Ca EDTA challenge and 4 days chelation with dramatic clearing of agitation and psychotic symptoms. He had a history of dyslexia, visual-motor incoordination and conduct disorder. His IQ was 83 at 9 years of age and 69 on recovery from the lead intoxication. A possible psychobiological vulnerability to lead intoxication in children with learning problems, ADD, or mental retardation is proposed. (McCracken JT. J Amer Acad Child Adol Psychiat 1987; 26:274-276).

NEUROPSYCHOLOGICAL SEQUELAE OF REYE'S SYNDROME

The author, a pediatric neurologist at the U. of Kansas School of Medicine, Wichita, Kansas, reviews the sequelae and risk factors in survivors of Reye's syndrome. He reports a

mortality rate of less than 20-30% but significant psychological sequelae in up to 64%, neurologic deficits in 54%, and major handicaps in 42% that include blindness, spasticity, mental retardation, and occasionally, seizures. Mild residual problems involve speech and language (30%), learning (30%), and behavior and emotion (50-70%). Factors that predict sequelae are 1) severe symptoms, 2) prolonged coma, and 3) young age group. Ammonia and SGOT levels do not correlate with prognosis. (Svoboda WB. J Nat Reye's Syndrome Foundation 1987; 7:34-37).

COMMENT: This report was one of 10 invited papers presented at the 12th annual meeting of the Nat Reye's Syndrome Foundation. The author points out that in the 1960's the question was "What is Reye's Syndrome?", in the 1970's, "Will the child survive?", and in the 1980's, "What sequelae may be expected and how should these be managed?"

In one report of 16 survivors of Reye's syndrome (Benjamin PY et al. Crit Care Med 1982; 10:583) significant emotional problems in 56% of the children and 94% of their mothers contrasted with relatively good intellectual and academic recovery. None had severe neurologic sequelae and 14 (88%) had IQ's within the normal range. The decreasing mortality rate of Reye's syndrome has focused attention on the quality of life of survivors and their parents.

ATTENTION DEFICIT DISORDER AND METHYLPHENIDATE

1) Members of the Departments of Social Ecology and Psychology at the University of California, Irvine 92717 and Los Angeles 90024 have investigated the effects of methylphenidate on the social behaviors of hyperactive children ages 6 to 11 during unstructured activities in an outdoor summer program. When a low dose of methylphenidate (0.3 mg/kg) was compared to placebo, 15 of 24 children treated showed medication-related decreases in negative behavior. The beneficial effects in younger children were greater than in older children and incremental improvements occurred between low and moderate dose levels (0.6 mg/kg). Neither low nor moderate doses of methylphenidate increased social withdrawal. (Whalen CK, Henker B et al. Natural social behaviors in hyperactive children: Dose effects of methylphenidate. J Consult and Clin Psychol 1987; 55:187-193).

2) A psychologist, psychiatrist, and pediatric neurologist at the University of Rochester, Rochester, NY 14627 collaborated in a study of the effects of methylphenidate on 19 adolescents with a childhood history of attention deficit disorder. In a double-blind crossover trial of methylphenidate (40 mg/day) compared to placebo for 3 week periods, parents and teachers reported drug-induced improvement in attentiveness and behavioral compliance and lessened overactivity. Subjective ratings of dysphoria (sadness or unhappiness) were lower and heart rates were higher during stimulant therapy at this dose level. (Klorman R, Coons HW, Borgstedt Ad. Effects of methylphenidate on adolescents with a childhood history of attention deficit disorder: I Clinical findings. J Amer Acad Child Adol Psychiat 1987; 26:363-367).

COMMENT: These studies provide further evidence for the beneficial effects of methylphenidate in the treatment of children and adolescents with attention deficit disorders and hyperactivity. Those who favor the use of stimulants may be encouraged by the finding that disruptive behaviors were reduced successfully without affecting overall sociability.