

the right side. (Mataro M, Garcia-Sanchez C, Junque C, Estevez-Gonzalez A, Pujol J. Magnetic resonance imaging measurement of the caudate nucleus in adolescents with attention-deficit hyperactivity disorder and its relationship with neuropsychological and behavioral measures. Arch Neurol Aug 1997;54:963-968). (Reprints: Carme Junque PhD, Departament de Psiquiatria i Psicobiologia Clinica, Facultat de Psicologia, Universitat de Barcelona, Passeig de la Vall d'Hebron, 171 08035 Barcelona, Spain).

COMMENT. This study provides further evidence of a neuropathological or developmental structural defect underlying behavioral and cognitive abnormalities in adolescents with ADHD. Caudate volume normally decreases with increasing age, but in children with ADHD this maturational process is delayed or absent. These findings support the hypothesis of a frontal-striatal dysfunction in the mechanism of ADHD. (Progress in Ped Neurology III, 1997;p198, 212). Structural cerebral anomalies in ADHD reported previously have involved the corpus callosum (Semrud-Clikeman M et al. 1994), caudate nucleus and other regions (Castellanos FX et al. 1996), and the left temporal lobe (Millichap JG, 1997).

EFFECT OF METHYLPHENIDATE ON THE IMMUNE SYSTEM

The effects of methylphenidate (MPH) on the immune system was studied in laboratory mice and in 6 healthy boys treated for ADHD with 30-45 mg/day MPH at the Kings County Hospital, Brooklyn, NY. In mice, MPH (1, 5, or 10 mg/kg) reduced by up to 63% numbers of T-helper/inducer cells and also IgG+ cells in the spleen and increased up to 400-fold the serum levels of IgG (ELISA), both in a dose-dependent pattern. Three of 6 boys had twofold increases in IgE levels (188-285 IU/mL). MPH induced a marked hypersensitivity to mitogen-induced proliferation of lymphocytes, a hypergammaglobulinemia, and increased IgE levels. (Auci DL, Fikrig S, Rodriguez J. Methylphenidate and the immune system. J Am Acad Child Adolesc Psychiatry Aug 1997;36:1015-1016 (Letter to Editor). (Respond: Dr Auci, State Univ NY, Health Sci Ctr, Brooklyn, or Dr Rodriguez, Kings Cty Hosp, Brooklyn, NY).

COMMENT. The apparent immunological effects of methylphenidate suggested by these studies is a disturbing finding which should discourage the use of larger and more toxic doses of MPH in the treatment of ADHD. Further investigations of this MPH-induced immune system hyperactivity are indicated, especially in children with IgE-mediated asthma, allergic rhinitis, and other atopic diseases, in HIV infected children, and its possible interference with immunizations and the normal maturation of the immune system in young children. Drugs used in asthma have been implicated in causation of ADHD. We are now concerned with the possible effects of stimulant treatment of ADHD on the outcome of asthmatic and other allergic disorders.

THE CANTWELL MODEL OF ADHD SCIENTIFIC RESEARCH

Dr Dennis Cantwell, a world renowned expert on ADHD, died April 14, 1997. In an article submitted from the UCLA Neuropsychiatric Institute in March 1997, as guest editor of a special section on ADHD, Dr Cantwell outlines his model in 8 phases of scientific study as follows: clinical diagnostic criteria, demographic, psychosocial, biological, family genetic, and family environmental factors, natural history, and management with psychostimulant medication and psychosocial methods of intervention.

Articles by other investigators that follow this introduction include comorbidity with juvenile-onset mania (ADHD may signal a very early onset of bipolar disorder); two new subclassifications (1. ADHD plus comorbid anxiety disorder may predict a lesser response to MPH; 2) ADHD plus conduct disorder and aggressive behavior predicts a more negative outcome); gender differences (ADHD girls have greater intellectual impairment, lower levels of hyperactivity, and lower rates of aggression); benefits of parent-assisted social skills training (ADHD-peer rejection may be benefited by a combination of child social skills training, training for the parents, and stimulant medication). (Cantwell DP. Introduction. The scientific study of child and adolescent psychopathology: The attention deficit disorder syndrome. J Am Acad Child Adolesc Psychiatry Aug 1997;36:1033-1035). (Reprints: Dr James McCracken, UCLA NPI 48-270, 760 Westwood Plaza, Los Angeles, CA 90024).

COMMENT. Future research suggested by the articles in this excellent review include: 1. The relation of MPH response to outcome over time; 2. different diagnostic criteria based on gender and age; 3. criteria for adult ADD; 4. genetic and biological markers; and 5. long-term efficacy of stimulant treatment. We should also add the need for research on adverse effects of stimulant therapy, including medication-induced seizures.

MEDICATION-INDUCED SEIZURES IN ADHD

The case of a 13-year-old boy with a history of ADHD and depressive disorder who had a tonic-clonic seizure 1 week after treatment with methylphenidate (80 mg/day) and sertraline (50 mg/day) is reported from Wright State University, School of Medicine, Dayton, OH. MPH dosage had been gradually increased over 1 year, and sertraline was added because of a worsening of depression. The seizure occurred one week after starting the combination therapy. The EEG was normal. Sertraline was discontinued, and MPH was continued unchanged with no recurrence of seizures. (Feeney DJ, Klykylo WM. Medication-induced seizures. (Letter to the Editor). J Am Acad Child Adolesc Psychiatry Aug 1997;36:1018-1019).

COMMENT. Methylphenidate alone may induce seizures in susceptible patients (see Ped Neur Briefs May 1997;p38), but the risk is aggravated by the addition of certain antidepressants. Despite the normal EEG in the above patient, it is probably advisable to order an EEG in a child with ADHD who requires a combination of stimulant and antidepressant medication. Epileptiform discharges in the EEG may prompt the addition of antiepileptic medication in some patients requiring treatment for ADHD and/or depression.

SEIZURE DISORDERS

MOVEMENT-INDUCED SEIZURES

Recurrent partial tonic postural seizures precipitated by slow movements unrelated to cognitive tasks are reported in a 16-year-old right-handed boy treated at Istituto di Clinica delle Malattie Nervose e Mentali, Rome, Italy. Performing repetitive flexion-extension of the right hand fingers, as in feeling coins in his pocket, induced a tonic posturing of the right arm followed by extension of the left hand and deviation of the head to the left. The ictal EEG showed brief voltage attenuation followed by 4-Hz sharp wave discharge in frontal-central regions, maximal left. Interictal SPECT