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ATTENTION DEFICIT DISORDERS

USAGE OF CNS STIMULANTS BY PEDIATRIC NEUROLOGISTS

An overuse of methylphenidate (MPH) in the treatment of attention deficit disorders (ADHD) has been reported by the International Narcotics Control Board, and the potential for drug abuse has prompted media criticism and cause for concern among some parents and physicians. A questionnaire was mailed to 160 pediatric neurologists and clinic directors in the United States, and 53 (33%) located in 28 different States responded. A diagnosis of ADHD was made in <5 to 100% (mean 33%) of patients treated, and 10 to 96% (mean 51%) of ADHD patients received stimulant medications. The age groups of patients receiving MPH were 3 - 5 years (8.7%), 6 - 12 years (70.3%), 13 - 18 years (20.4%), and adults (0.6%). The drug of choice was MPH (90%). Pemoline and dextroamphetamine were equally favored as 2nd or 3rd choice stimulants. The mean average daily dose of MPH was 20 mg (range 10-40 mg); the mean maximum daily dose was 52 mg (range 25-85 mg). Drug holidays at weekends and school vacations were recommended by 65%. The duration of therapy with stimulants ranged from 1 to 5 years (mean 3.5 years). The adverse effects of MPH were as follows: personality changes in 7%, tics (5%), weight loss (4%), seizures (0.9%), and miscellaneous (2.3%), including insomnia (3), headache (2), increased activity (2), and parental anxiety (1). (Millichap JG. Usage of CNS stimulants for ADHD by pediatric neurologists. A questionnaire survey. Ped Neur Briefs Sept 1996:10:65).

COMMENT. An overuse of methylphenidate by physicians treating attention deficit hyperactivity disorders in the United States was not supported by this questionnaire survey of pediatric neurologists. The side effects reported, especially personality changes, are usually dose related.

Contraindications or factors requiring extra caution in the use of stimulants for ADHD are as follows: 1) Tourette's syndrome or tics, 2) family history of tics, 3) history of seizures and/or EEG dysrhythmia, 4) history of drug abuse/dependence, 5) family history of drug abuse, 6) psychosis or anxiety/depression, 7) poor nutrition or short stature, 8) headaches, sleep

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disturbance, 9) liver dysfunction (pemoline), 10) treatment with other medications eg. clonidine, MAO inhibitors.

OPPOSITIONAL DEFIANT DISORDER, CONDUCT, AND ADHD

The link between oppositional defiant disorder (ODD) and conduct disorder (CD) was evaluated in 140 children with attention-deficit hyperactivity disorder (ADHD) and 120 normal controls examined at baseline and 4 years later, in midadolescence, at the Pediatric Psychopharmacology Unit, Psychiatric Service, Massachusetts General Hospital, Boston, MA, Of ADHD children, 65% had comorbid ODD and 22% had CD at baseline. Of ODD children, 32% had comorbid CD. Children with CD also had ODD that preceded CD by several years. Children with both ODD and CD had more severe symptoms of ODD, more psychiatric disorders, more bipolar disorder, and more abnormal behavior scores compared to ADHD children without comorbidity. Risk of CD at 4-year follow-up was not increased in children with ODD without CD at baseline. Two subtypes of ODD associated with ADHD were evident: one prodromal to CD and one that is not. (Biederman I et al. Is childhood oppositional defiant disorder a precursor to adolescent conduct disorder? Findings from a four-year follow-up study of children with ADHD. I Am Acad Child Adolesc Psychiatry Sept 1996:35:1193-1204), (Reprints: Dr Biederman, Pediatric Psychopharmacology Unit (ACC 725), Massachusetts General Hospital, Fruit Street, Boston, MA 02114).

COMMENT. The majority of ODD children with ADHD do not have comorbid CD, whereas CD is almost always comorbid with ODD which precedes the onset of CD by several years. The majority of children with ADHD and CD had developed CD before age 12 years. Adolescent onset CD is rare. CD with ADHD is associated with higher frequency of substance abuse in adolescence, and higher levels of anxiety disorders and mood disorders. Two ODD subtypes, one prodromal to CD and one without, have different outcomes.

LEARNING AND BEHAVIOR DISORDERS

NEURAL BASIS OF DYSLEXIA

Whole-head magnetoencephalography (MEG) was employed to track noninvasively the cortical activation sequences during visual word recognition in 6 adult dyslexic and 8 control subjects examined at the Brain Research Unit, Helsinki University of Technology, Espoo; and the Departments of Psychology and Radiology, University of Helsinki, Helsinki, Finland. Significant differences between the two groups were found for the time window 0 to 200 msec after single word presentation in the left inferior temporo-occipital cortex, for 200 to 400 msec in the left temporal lobe, and for 0 to 400 msec in the left inferior frontal lobe. Considerable interindividual variability was shown for spatiotemporal activation patterns. Dyslexics failed to activate the left inferior temporo-occipital cortex within 200 msec after word presentation. The left temporal lobe, including Wernicke's area, a region associated with phonological aspects of language, was strongly involved in controls but not in dyslexics. Dyslexics activated, instead, the left inferior frontal lobe, involving Broca's area, whereas activation of the right motor/premotor cortex, present in controls, was absent in dyslexics. Perception of words as specific units was impaired in dyslexics. (Salmelin R et al. Impaired visual word processing in dyslexia revealed with