

when compared to placebo. Improvements in cognition while on Adderall, at either low or high dose, did not reach significance. All 3 drugs decreased locomotor activity measurements significantly from 9am to 7pm. Activity was significantly increased from 8-9pm during treatment with immediate-release DXA. DXA Spansules were significantly more effective than both DXA tablets and Adderall between 4 and 7pm. Sleep duration was significantly decreased by DXA Spansules and tablets but not by Adderall. Nurse ratings of adverse events were increased, especially for DXA Spansules. Parent ratings of adverse events were less in the second compared to the first week of treatment. All 3 drugs significantly decreased body weight ($p < .001$), especially with higher doses of Adderall and DXA Spansules. Final review, that included parent and teacher assessments of the "best week" for each child, selected high-dose immediate-release DXA as the optimum choice for continuing open trial (in 32%), low-dose DXA Spansules (26%), high-dose Adderall (18%), high-dose DXA Spansules (12%), and low-dose Adderall and low-dose DXA tablets, both (6%). Seventeen received a brief open trial of methylphenidate (MPH) at the conclusion of the study, as an option for further treatment. At discharge, 12 (34%) were placed on immediate-release DXA, 8 (23%) on MPH, 6 (17%) on Adderall, and 5 (14%) on DXA Spansules. (James RS, Sharp WS, Bastain TM et al. Double-blind, placebo-controlled study of single-dose amphetamine formulations in ADHD. J Am Acad Child Adolesc Psychiatry November 2001;40:1268-1276). (Reprints: F Xavier Castellanos MD, NYU Child Study Center, 577 First Ave, New York, NY 10016).

COMMENT. This is the first controlled comparison of Adderall and both DXA tablets and Spansules. Whereas the control of hyperactive behavior by Adderall began earlier than the response to both DXA preparations and continued up to 13 hours after a single morning dose, DXA Spansules were superior to Adderall in decreasing hyperactivity in early afternoon and evening. Spansules exhibited significant and better effects than Adderall on academic performance. Immediate-release DXA was chosen most frequently by parents, teachers and staff as the overall optimum therapy for ADHD. Future studies may show that multiple doses or a combination of immediate-release DXA and Spansules are superior to single doses of either drug alone in some patients. With the recent mushrooming introduction of alternative, sustained release stimulants (Concerta, Adderall ER, etc) for the treatment of ADHD, well controlled studies similar to the above will be needed to demonstrate their superiority to existing less costly preparations. Extended release medications avoid school nurse administration when an all day effect is desired, but adverse events may be increased.

Methylphenidate enhances task-switching performance in a study of 20 children with ADHD at the University of Illinois at Urbana-Champaign, IL (Kramer AF, Cepeda NJ, Cepeda ML. J Am Acad Child Adolesc Psychiatry Nov 2001;40:1277-1264). MPH selectively facilitates inhibitory cognitive processes which allow performance and coordination of multiple tasks.

TIC DISORDER AND ADHD

The behavioral and neuropsychological characteristics of tic disorder, with or without attention-deficit hyperactivity disorder (ADHD), were examined in 78 children followed at Seoul National University College of Medicine, Korea. Sixteen had tic disorder alone, 19 had comorbid tics and ADHD, 21 had ADHD alone, and 22 were normal controls. Seven neuropsychological tests involving global cognitive function, attention, information-processing, and fine motor coordination were compared in the 4 groups. Tic disorder with ADHD and ADHD patients had similar

findings and marked deficits compared to the tic disorder and control groups. In tests of attention, the ADHD group made more errors of commission than the tic disorder with ADHD group. ADHD symptoms found in children with tic disorder may be a true comorbid condition and not secondary to tic symptoms. (Shin M-S, Chung S-J, Hong K-E M. Comparative study of the behavioral and neuropsychological characteristics of tic disorder with or without attention-deficit hyperactivity disorder (ADHD). J Child Neurol Oct 2001;16:719-726). (Respond: Dr Kang-E Michael Hong, Department of Child Psychiatry, Seoul National University College of Medicine, 28 Youngon-Dong, Chongno-Gu, Seoul 110-744, Korea).

COMMENT. Tic disorder comorbid with ADHD carries an increased risk of cognitive deficits and behavioral disturbance similar to that found with ADHD alone, whereas tic disorder alone is not a risk factor. This report confirms previous findings in a study using transcranial magnetic stimulation to demonstrate additive deficits in inhibitory cortical motor mechanisms in children with ADHD comorbid with tic disorder (Moll GH et al. 2001; see Ped Neur Briefs March 2001;15:22-23).

The prevalence of ADHD in patients with tic disorder has been estimated at more than 50%. Although the use of stimulants for ADHD associated with tics is controversial, the authors favored early intervention to correct attention and behavioral problems. An exacerbation of tics would probably mandate immediate stimulant withdrawal. For studies of treatments of ADHD and Tics, see Progress in Pediatric Neurology III, PNB Publ, 1997;pp318-321.

TICS AND SCHOOL DYSFUNCTION

The prevalence of tics in special education (SpEd) students and in a matched control sample of students in regular classroom programs (RegEd) was determined in a large-scale, community-based epidemiological study at the University of Rochester School of Medicine, NY. A total of 1596 students (ages 8.5-17.5 yrs) drawn from the Rochester City School district and 9 surrounding Monroe County suburban public school districts were interviewed from November 1994 to March 1998. Three RegEd subjects were randomly selected for every one SpEd subject. The disability classifications of SpEd students included learning disability (79%), speech impaired (14%), emotionally disturbed (5%), and other (2%). Interviews of 341 SpEd and 1255 RegEd students were conducted by neuropsychological technicians trained to assess the presence and severity of tics, and to distinguish them from other movements and behaviors. Each technician had spent 3 months with a neurologist, expert in movement disorders, observing approximately 75 children with tics prior to the study. Parent interviews were conducted in the school office or by telephone. RegEd and SpEd students were evaluated in the same time periods, and interviewers were blinded to educational placement. Tics were classified as either definite (observed) or probable (based on historical information), and motor or vocal. The proportion of tics in the SpEd and RegEd groups was 27% and 19.7%, respectively ($p=.008$). The weighted prevalence estimates for tics were 23.4% for SpEd and 18.5% for RegEd students. Including only definite tics, the SpEd group still had a higher proportion of tics ($p=.09$). A higher percentage of students in SpEd (7%) met diagnostic criteria for Tourette syndrome than those in RegEd (3.8%; $p=.01$). Thirty percent of students in the SpEd group were receiving stimulant medication compared to 7.5% of RegEd students. Tics are a common disorder in school children and are strongly associated with school dysfunction and placement in special education. (Kurlan R, McDermott MP, Deeley C et al. Prevalence of tics in school children and association with placement in special education. Neurology October