animals causes the greatest total increase in activity (Kennard MA et al. J Neurophysiol 1941:4:512. Millichap JG et al. Excerpta Medica 1974:130-139). We found an increase in locomotor activity of mice with prefrontal cortical lesions and those animals with the highest level of post-operative activity responded to methylphenidate with a reduction in locomotor activity. We suggested that animals with prefrontal cortical lesions should make valuable experimental models for testing new drugs. The beneficial effect of methylphenidate on hyperactivity in our patients was related to the level of motor activity before treatment and the degree of neurologic abnormality. ADDH patients with the greatest number of neurologic signs were most active and were most likely to benefit from stimulant therapy. (N.Y. Acad Sci 1973:205:321). A neuroanatomical basis for ADDH in some children might be substantiated by the MRI.

METHYLPHENIDATE AND ATTENTION DEFICIT DISORDER

The relative effects of sustained release (Ritalin [SR-207[) and standard methylphenidate (Ritalin 10 mg, BD) on cognitive and social behavior in 22 boys with ADD were investigated at a summer treatment program supervised by the Western Psychiatric Institute, Univ of Pittsburgh School of Medicine, PA. Group analyses of data showed that both drugs were effective but standard methylphenidate was superior to SR-20 on measures of disruptive behavior and SR-20 had a slower onset on a continuous performance task. Analyses of individual responsivity showed that most boys responded more positively to the standard compared to the sustained-release preparation of methylphenidate. The authors note that in contrast to advertising material, the effects of SR-20 and standard methylphenidate are not equivalent. They recommend pemoline or slow-release dextroamphetamine in preference to SR-20 if a single daily dose sustained effect is required. (Pelham WE Jr et al. Sustained release and standard methylphenidate effects on cognitive and social behavior in children with attention deficit disorder. Pediatrics 1987:80:491-501).

COMMENT: Stimulant medications used in the treatment of ADDH have different half lives: methylphenidate 2.6 hours on a dose of 0.60 mg/kg; dextroamphetamine 6.8 hours with 0.45 mg/kg; and pemoline 8.36 hours after doses up to 110 mg (see Zametkin AJ, Rapoport JL in Ped Neur Briefs 1987:1(5):37). Clinical responses, however, are not always correlated with the half life of the drug or with plasma levels which may vary considerably from day to day in patients with a fixed dose. Previous studies have shown that time release Dexedrine may not act for longer time periods than the standard tablet form. These inconsistencies, together with the findings in the present study, suggest that standard methylphenidate or pemoline remain the treatments of choice in ADDH.