

studies, twin studies, and a high rate of positive family histories in case studies. The risk of PNE to parents is 6.7-fold, and the risk to siblings 3.6-fold. Rates of enuresis in individuals with ADHD range from 20-30%, compared to 10% in the average population of 7 yr old children. In both conditions, boys are affected more frequently than girls. The frequency of ADHD is increased in PNE children compared to non-PNE controls. The present study suggests that the association of PNE and ADHD is not due to a shared genetic basis.

Factors in etiology of PNE other than genetic transmission are also considered in a commentary by Jarvelin M-R (*Acta Paediatr* Dec 1999;88:1315-1317). These include delayed maturation of the nervous system, disturbed arginine-vasopressin secretion, prenatal and birth-related factors, neurobehavioral disorders, and psychosocial factors. Many of these factors also apply to the presumed etiology of ADHD.

META-ANALYSIS STUDY OF CLONIDINE IN ADHD

The literature on the clinical use of clonidine for attention deficit hyperactivity disorder (ADHD), from 1980-1999, was reviewed at the Department of Psychiatry, University of Massachusetts Medical School, Worcester, MA. In 11 studies analyzed clonidine had positive effects in the treatment of ADHD and ADHD comorbid with conduct disorder, developmental delay, and tic disorder. The benefits were reported by clinician, parent, and teacher, and the effect was of moderate size (0.58 +/- 0.16) and less than that of stimulants. The effect was significantly greater for the ADHD-alone group. Clonidine was associated with a high prevalence of side effects, especially sedation, irritability, night awakening, hypotension, and dizziness. Two studies using the transdermal system reported a high percentage of localized rash, erythema, and skin irritation under the patch. In one of 3 studies with ECG data, changes were noted but no cardiac symptoms. (Connor DF, Fletcher KE, Swanson JM. A meta-analysis of clonidine for symptoms of attention-deficit hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry* Dec 1999;38:1551-1559). (Reprints: Dr Daniel F Connor, Department of Psychiatry, Room S7-828, University of Massachusetts Medical School, Worcester, MA 01655).

COMMENT. Clonidine is a second line treatment for ADHD and is less effective than stimulants, even in patients with comorbid disorders. A moderate size benefit is associated with a high incidence of side effects. In combination with stimulants, the risk of serious side effects is a concern, and a treatment to be avoided pending further study. The disappointing results of this meta-analysis may promote a greater interest in Tenex as an alternative treatment for ADHD children with comorbidity, including tics, insomnia, and oppositional defiance disorder.

PANDAS, TICS AND OCD, AND IMMUNOTHERAPY

Thirty children with severe, streptococcal-triggered exacerbations of tics or obsessive compulsive disorder (OCD) were treated with plasma exchange (5 in 2 weeks), intravenous immunoglobulin (IVIG, 1 g/kg daily on 2 consecutive days), or placebo saline solution, randomly assigned, in a study at the National Institutes of Health, Bethesda, MD. Neuropsychiatric medications were continued through the study, and oral penicillin or erythromycin was given during follow-up to protect against streptococcal infections. Throat cultures were negative at baseline, and antistreptolysin-O titers were positive in at least half the patients in each treatment group (mean 350-517). Similar elevations were found for AS deoxyribonucleic B titers. At 1 month, the improvements in the IVIG and plasma exchange groups were 45-58% for OCD, 31-47% for anxiety, 33-35% for overall