Dangerous drinking behavior common in mental retardation

Polydipsia—excessive drinking of water or other fluids, unrelated to thirst—may be a relatively common and underdiagnosed condition in homes or institutions for the developmentally disabled, according to new research.

Jonathan Hayfron-Benjamin and colleagues screened 660 ambulatory residents at an institution for persons with developmental disabilities, asking caregivers about unusual behaviors including drinking 20 or more glasses of water per day, or seeking water from sources such as baths or urinals. The researchers found that 33 individuals, or five percent of the ambulatory population, exhibited polydipsia not explained by medical conditions such as diabetes or medication use. This may be an underestimate, they note, as many individuals exhibit polydipsia episodically rather than continuously. The incidence of polydipsia was not related to age, sex, or level of retardation.

"Physicians caring for individuals with all levels of mental disabilities should be aware of polydipsic behavior," they say, "because its acute complication, water intoxication, can be difficult to diagnose and is potentially fatal." Water intoxication can cause cardiac failure, pathological fractures, and urinary tract abnormalities. Polydipsia can be controlled, the researchers say, by limiting access to water or implementing behavior modification techniques.

The researchers add that physicians should consider polydipsia and water intoxication particularly when dealing with retarded patients with hypothyroidism. Two of their subjects with polydipsia suffered from hypothyroidism, and they note that other researchers have reported a connection between hypothyroidism and polydipsia.

Polydipsia can be difficult to diagnosis, and methods such as weighing or laboratory tests are costly and/or difficult to perform on uncooperative mentally retarded subjects. Hayfron-Benjamin et al. found, however, that caregiver reports were very accurate in identifying the disorder.

The researchers note that two other recent studies have reported similar levels of polydipsia in facilities for the developmentally disabled. A. J. Bremner and A. Regan found a polydipsia prevalence of 3.5% in one facility, and S. Deb et al. found a prevalence of 6.2% in a hospital-based group of developmentally disabled subjects.

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"A demographic study of polydipsia in an institution for the intellectually disabled," and "Screening patients with mental retardation for polydipsia," both by Jonathan Hayfron-Benjamin, Claudia Peters, and Rosamund Woodhouse; both in *Canadian Journal of Psychiatry*, Vol. 41, October 1996, pp. 519-527. Address: Jonathan Hayfron-Benjamin, Rideau Regional Centre, P.O. Box 2000, Smiths Falls, ON K7A 4T7.

Risperidone: positive effects on PDD

After testing risperidone on children and adolescents with pervasive developmental disorders (PDDs), Sandra Fisman and Margaret Steele conclude that the drug "holds promise as an effective agent with a lower risk of side effects [than many other drugs for PDD], especially with conservative doses."

Fisman and Steele tested risperidone (marketed under the brand name Risperdal) on 14 children and teenagers. Nine of the subjects were labeled as having Asperger's syndrome, four as having autism, and one as having "pervasive developmental disorder not otherwise specified." The researchers were interested in the effects of risperidone because the drug is effective in treating schizophrenia, and "symptoms similar to the positive and negative symptoms of schizophrenia may be observed in the pervasive developmental disorders."

Fisman and Steele report that "thirteen of the 14 youths appeared to benefit from risperidone," based on caregivers' reports and improved scores on the Children's Global Assessment Scale. Improvements included:

—marked reductions in disruptive behaviors in all patients with such behaviors.

—significant reduction in agitation and anxiety in ten patients.

—markedly improved social awareness in ten patients, with moderate improvements in three and slight improvement in one.

—reduction in obsessive behaviors in 13 of 14 subjects.

—significant improvements in attention.

The researchers add that with the exception of temporary sedation in five subjects and insomnia and a runny nose in one subject, no side effects of risperidone were seen. This compares favorably with older neuroleptic drugs, they say, noting that these drugs "are associated with a high risk/benefit ratio, particularly in long-term use." They also note that relatively low doses of risperidone (ranging from .75 to 1.5 mg daily) proved to be effective.

Fisman's and Steele's study is the latest in a series suggesting that risperidone is safer and possibly more efficacious in treating symptoms of autism and PDD than other drugs (see ARRI 10/2, 8/4). Although the drug occasionally produces serious side effects such as neuroleptic malignant syndrome (see ARRI 10/3), such problems appear to be relatively rare.

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"Use of risperidone in pervasive developmental disorders: a case series," Sandra Fisman and Margaret Steele; *Journal of Child and Adol. Psychopharmacology*, Vol. 6, No. 3, 1996. Address: Sandra Fisman, Division of Child and Adolescent Psychiatry, London Health Sciences Centre, Room 6118, 6 North, Phase I, WC, 800 Commissioners Road East, London, Ontario N6C 2V5, Canada.

Pentoxifylline

(continued from page 1)

—S. Turek reported "highly positive" improvement in behavior (12 children) and language (14 children) in her group of 18 patients.

—M. Suzuki et al. studied the effects of pentoxifylline on the electroencephalogram (EEG) readings of autistic children. Significant changes were seen in the EEGs of 7 of 18 subjects following pentoxifylline administration. In addition, social and communicative skills improved.

Gupta et al. note that pentoxifylline has a number of pharmacological effects that could explain preliminary findings that the drug reduces autistic symptoms. These effects include:

—Inhibiting the secretion of tumor necrosis factor-α.

Tumor necrosis factor-α, a substance produced within the brain, has been shown to cause death or demyelination (destruction of the insulating myelin sheath) of certain cells in the central nervous system. Gupta et al. note that "tumor necrosis factor-α has been suggested to play a role in the pathogenesis of various neurologic disorders associated with demyelination," including multiple sclerosis. Furthermore, they say, "recently, we observed that mononuclear cells from children with autism secrete significantly higher amounts of tumor necrosis factor-α than controls." Other researchers have reported evidence linking autism to an immune system attack on myelin basic protein, a component of myelin (see ARRI 7/1).

—Increasing blood flow and tissue oxygen consumption.

Studies have shown decreased blood flow in some regions of autistic subjects' brains, in particular the temporal and parietal lobes. Gupta et al. speculate that pentoxifylline may improve cerebral blood flow in these individuals.

—Enhancing serotonergic response in the central nervous system.

Pentoxifylline facilitates the synthesis and release of serotonin. Numerous studies suggest that autistic individuals exhibit abnormal levels of, or sensitivity to, serotonin (see ARRI 10/4).

Gupta et al. note that while the Japanese studies of pentoxifylline are encouraging, "none of [these] studies employed parallel control groups, placebo groups, or crossover designs," and several either did not use standardized tests or did not define the tests used to assess subjects. Thus, the researchers say, "though these preliminary uncontrolled studies appear promising, a double-blind, placebo-controlled multicenter study is needed before general use of pentoxifylline in autism can be recommended."

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"Pentoxifylline: brief review and rationale for its possible use in the treatment of autism," Sudhir Gupta, Bernard Rimland, and Paul D. Shilling; *Journal of Child Neurology*, Vol. 11, No. 6, November 1996, pp. 501-504. Address: Sudhir Gupta, Department of Medical Sciences, University of California at Irvine, Irvine, CA 92717.