

Biomedical/Educational Update:

Desipramine warning

Desipramine, a tricyclic antidepressant, is currently used to treat disorders ranging from autism to bed-wetting, and has been described as "the most popular medication for children among child psychiatrists." ARI has received anecdotal reports from autistic adults who say the drug is useful in treating symptoms of anxiety, and new research indicates that it is effective in treating concurrent Tourette's and hyperactivity.

Some doctors are voicing concerns about desipramine, however, following four cases of sudden death involving children taking the drug. All appear to be due to cardiac arrhythmia leading to cardiac arrest.

Mark Riddle et al., who reported one of the deaths, say that "it is possible desipramine differs from other tricyclics in ways that make it potentially more lethal. This possibility is supported by the findings of a recent study indicating that the chance of death after an overdose is greater for desipramine than for other tricyclic drugs." They recommend that doctors thinking of prescribing desipramine carefully review patients' medical histories, and ask about family histories of cardiac disorders.

"Tricyclic antidepressant treatment of children with ADHD and tic disorders," Thomas Spencer, Joseph Biederman, and Timothy Wilens; *Journal of the American Academy of Child and Adolescent Psychiatry*, Vol. 33, No. 8, 1994. Address: T. Spencer, Pediat. Psychopharmacology Unit, Mass. Gen. Hospital, Boston, MA.

—and—

"Another sudden death in a child treated with desipramine," Mark Riddle, Barbara Geller, and Neal Ryan; *Journal of the American Academy of Child and Adolescent Psychiatry*, Vol. 32, No. 4, 1993. Address: M. Riddle, Child and Adol. Psychiatry, Yale Univ. School of Medicine, New Haven, CT.

Pica dramatically reduced

Pica, the eating of non-food items, is a common behavior in autistic and retarded individuals. In addition to increasing the risk of lead poisoning, pica can lead to intestinal blockage or perforation, and intestinal parasites.

Cynthia Johnson and colleagues recently reported a simple procedure which led to a dramatic decrease in pica in one retarded teenager, and a significant (although smaller) drop in another teen. One of their subjects, a 15-year-old boy, had been treated three times for lead poisoning; the other, a 13-year-old boy, had frequently been hospitalized after ingesting household cleansers, cosmetics, and other toxins.

The treatment program consisted of:

1. Placing all appropriate food items on a bright yellow placemat, and praising the boys for eating these items.

2. Placing "bait" (flour-and-water replicas of paint chips and other inappropriate items) around the room, and punishing either boy for eating these items. Punishment consisted of saying "no" firmly, and then either washing the subject's face

with a face wipe, or restraining the subject's arms at his side for 15 seconds.

3. Teaching both subjects to use a sign or gesture to communicate their desire to have more food put on the placemat.

The researchers report that one subject's pica rate decreased from 39% during sessions to about 3% after six weeks of training. At a 10-week follow-up at home, pica rates were nearly zero. The second subject's pica also declined significantly, but he still exhibited the behavior fairly often.

Johnson et al. also report that the face-washing procedure was a more effective punishment than the restraint procedure, possibly because it was more similar to the behavior being punished. As for the use of punishment procedures, the researchers say that "given the life-threatening nature of pica, it is paramount to aggressively intervene in this behavior."

"Discrimination training in the treatment of pica and food scavenging," Cynthia R. Johnson, Frances M. Hunt, and Mary Jo Siebert; *Behavior Modification*, Vol. 18, No. 2, April 1994. Address: Cynthia R. Johnson, University of Pittsburgh, School of Medicine, Pittsburgh, PA.

More on exercise

California researchers offer new evidence that exercise can reduce behavior problems in autistic individuals—but only if the exercise is strenuous.

Last year, Canadian researchers found that vigorous exercise reduced autistic children's stereotypic behaviors (body rocking, hand flapping, etc.), while mild exercise had no effect. Now Reed Elliott, Jr., and colleagues report similar results with a group of autistic and retarded adults.

The researchers compared subjects' behavior following 20-minute sessions of aerobic exercise, less vigorous exercise, or tabletop games. They found that vigorous exercise reduced both stereotypies and maladaptive behaviors such as aggression, self-injury, and destructiveness. No improvement was seen following the other conditions. The behavior of half of the six study subjects improved following vigorous exercise, while the other half showed no change.

The researchers then compared the results of vigorous exercise and no-exercise conditions on two subjects' later performance of their jobs (delivering advertising fliers to homes). "When aerobic exercise preceded the vocational task," they say, "both participants had fewer time blocks in which maladaptive and stereotypic behaviors occurred."

"Vigorous, aerobic exercise versus general motor training activities: effects on maladaptive and stereotypic behaviors of adults with both autism and mental retardation," Reed O. Elliott, Jr., Anjanette R. Dobbin, Gordon D. Rose, and Henry V. Soper; *Journal of Autism and Developmental Disorders*, Vol. 24, No. 5, Oct. 1994. Address: Reed Elliott, Jr., Vocational Opportunities Coordinator, Regional Project at Camarillo, Box 6022, Camarillo, CA 93011.

SIB and self-restraint

Many children with self-injurious behaviors (SIB) try to restrain themselves—for instance, by wrapping their arms in their clothes, or sitting on their hands. Researchers suggest that autistic individuals use self-restraint to avoid hurting themselves, or to produce sensory effects similar to SIB. Another theory is that both self-injury and self-restraint can be attention-getting devices, or can allow an individual to escape from tasks.

Self-restraint is a difficult behavior to eliminate, and can interfere with training and socialization. Prolonged self-restraint may also cause circulation problems, while mechanical restraints such as arm splints can cause tendon shortening or bone demineralization if used long-term.

In a recent study, D. C. Lerman et al. successfully used a three-phase plan to reduce self-restraint in a self-injurious 20-year-old retarded man who restrained himself from SIB primarily by wrapping his arms in his shirt. Prior to treatment, the man was virtually untrainable, because he began injuring himself whenever his arms were removed from his shirt. Treatment consisted of:

1. Fading the man's self-restraint by removing his shirt during each training session and instead giving him a towel sewn into a loop. The towel was gradually shortened, until it was about the size of a headband. Midway through this process, the man was also given wrist bands. (Eventually the towel "headband" was replaced by a bandanna.) While the man still restrained himself, the wristbands and headband were more socially acceptable and less restrictive than using his shirt.

2. Teaching the man to remove his hands from the restraints and use them to obtain food rewards. Once this was accomplished, reinforcers were gradually replaced by tasks; for instance, the man was asked to put a block into a bucket, and received praise and food if he complied with no SIB.

3. Teaching the man a simple sign to use for requesting reinforcers for appropriate behavior. Signing, like the tasks in step 2, required the man to remove his hands from the restraints.

The researchers say this three-stage procedure "reduced self-restraint, maintained SIB at a low level, and increased both instruction-following behavior and unprompted requesting." Their study indicates, they say, that "restraint fading combined with the development of alternative behavior could be an effective treatment procedure for those who engage in both self-restraint and SIB."

"Restraint fading and the development of alternative behaviour in the treatment of self-restraint and self-injury," D. C. Lerman, B. A. Iwata, R. G. Smith and T. R. Vollmer; *Journal of Intellectual Disability Research*, 1994, 38, 135-148. Address: Brian Iwata, Psychology Dept., University of Florida, Gainesville, FL 32611.