Better drug treatments for autism necessary

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the argument that the narcotic antagonist both blocks the reinforcing rewards of endogenous opioids and allows the patient the negative reinforcement of pain."

Lienemann and Walker report that after one year on naltrexone, their patient has not developed a tolerance for the drug and her self-injury has not escalated.

FENFLURAMINE

Campbell's studies indicate that fenfluramine is no more effective than a placebo, but other researchers have found that some children have fewer abnormal motor behaviors while taking the drug. Campbell notes that fenfluramine has been associated with retardation of discrimination learning, and that its effects appear to diminish significantly after a few months. Her reservations about the drug are supported by three new studies which indicate that fenfluramine, hailed several years ago as a wonder drug for autistic children, may be of little help in treating the disorder.

Swedish researchers Gunnar Ekman et al., who tested fenfluramine on 20 autistic children for 48 weeks in a double-blind, placebo controlled crossover study, report in the *Journal of Autism and Developmental Disorders* that "the only significant improvement was a decrease in abnormal motor behavior." While abnormal motor activity decreased, they add, this may have been due to sedation caused by fenfluramine rather than to therapeutic effects of the drug.

Three new studies show fenfluramine has no beneficial effect; Campbell found it no more effective than a placebo.

In summary, the researchers conclude, "our study has not been able to confirm a specific positive effect of fenfluramine in the treatment of infantile autism." They note, however, that the parents of two children felt strongly that the drug had helped their children, and that these parents continued the children on fenfluramine after the study ended. (Conversely, other children experienced side effects including behavior problems, fatigue and loss of appetite, and two children were removed from the study due to side effects from the drug.)

While fenfluramine does lower abnormally high levels of the "messenger" chemical serotonin found in some autistic children, Ekman and colleagues found no correlation between initial serotonin levels and improvement on the drug.

In another study, also in the *Journal of Autism and Developmental Disorders*, Canadian researchers Jeffrey Sherman et al. found "no significant improvements" in a group of 15 autistic children and teenagers taking fenfluramine in a double-blind placebo crossover study. In fact, the researchers say, videotapes taken during placebo and drug phases indicated that the children actually were somewhat more destructive and significantly less social while taking the drug than while on the placebo.

"These data indicate that the drug has minimal effects on cognitive performance and behavior and these effects tend to be neutral or negative rather than positive," the researchers conclude, adding that "based on our data, we cannot recommend the use of fenfluramine hydrochloride as a treatment for autistic individuals."

In a letter in the *Canadian Journal of Psychiatry*, Philip G. Ney reports that his double-blind crossover placebo study of the effects of fenfluramine on eight autistic children showed that "although there were changes in...serotonin level(s), there was no overall significant beneficial effect.

"Moreover," he notes, "because of the large number of side effects, the parents chose not to continue their children on fenfluramine although, because of various media reports, they had been very keen to begin the trial." The unpleasant side effects, he adds, made it impossible to keep parents, care providers and the researchers blind as to whether the drug or the placebo was being administered.

Ney et al. mention that they are testing essential fatty acids as an autism therapy, and have seen some beneficial results.

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List of references available upon request; send self-addressed, stamped envelope, and ask for references for "Drug Treatments" article.

Diet therapies show promise

Special diets and nutritional supplements can be valuable treatments for some forms of autism, according to pediatric neurologist Mary Coleman. Coleman reports that:

—Despite routine testing for phenylketonuria (PKU) in the U.S., up to 20% of infants with this disorder may not be diagnosed due to laboratory errors, early hospital discharges, and other factors. In PKU, high levels of the amino acid phenylalanine build up in the body, forming toxic substances; the disorder can be treated with a diet low in phenylalanine if discovered during the first six weeks of life. If untreated, PKU causes neurological deterioration leading to mental retardation and in some cases symptoms of autism.

Starting diet therapy after a child with PKU has already developed symptoms of autism or retardation will not reverse the disorder; however, Coleman notes, studies suggest that "starting the diet at later ages may prevent further progression of the disability and possibly may have some behavioral benefit."

—Researchers in France and the U.S. have described a subgroup of autistic children who excrete large amounts of uric acid in their urine, and who have abnormal levels of three purine enzymes. Coleman says three experimental therapies for "purine" autism, all experimental, are a low-purine diet; the gout medication allopurinol; and administration of adenosine, itself a purine.

"Restricting purines in the diet usually gives no clear-cut improvement in the autistic patient's symptoms," Coleman explains, "but occasionally a child is helped by the diet." One patient, she reports, recovered completely by age seven after being on a low-purine diet for two years; her symptoms returned within three days of discontinuing the diet, and disappeared when the diet was reinstated.

—Coleman also has found that many autistic children have low levels of calcium; these children, she says, tend to have myoclonic seizures, lack expressive speech and injure their eyes. Coleman's treatment includes a high-calcium diet combined with calcium supplements, as well as anticonvulsant therapy when seizures are a symptom.

Several other nutritional treatments, Coleman says, merit further study. Among them: folic acid supplementation for prepubertal children with Fragile X syndrome, and thiamine supplementation or a ketogenic (high fat, low carbohydrate) diet for autistic children with a condition known as lactic acidosis.

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"Nutritional treatments currently under investigation in autism," Mary Coleman; *Clinical Nutrition*, Vol. 8, No. 5, Sept./Oct. 1989, pp. 210-212.

Correction

The research reported in ARRI Volume 3, Number 4, on the use of dolphins in helping autistic children was conducted by Dr. Betsy Smith, the director of the Dolphins Plus program. Dr. Jorge Pena participated by training the counselors of the autistic children.