

Biomedical/Education Update:

Do 'strep throat' bacteria play a role in autism?

In 1996, Susan Swedo and colleagues reported that the bacteria that cause strep throat can also cause Tourette syndrome-like tics, hyperactivity, obsessive-compulsive disorder, and other behavioral abnormalities categorized as PANDAS (pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections). A new study by a different group of researchers suggests that "strep" bacteria may also play a role in autism, and, in particular, in the repetitive behaviors exhibited by many autistic individuals.

Eric Hollander and colleagues collected blood samples from 18 autistic children and 14 control subjects, and measured the percentage of D8/17-positive cells. Research indicates that D8/17, a monoclonal antibody previously associated with rheumatic fever (a streptococcus-caused illness), can be used as a predictor for PANDAS. (In a study published in 1997, Swedo and colleagues reported that 23 out of 27 children with PANDAS were D8/17 positive, in comparison to only four of 24 children without PANDAS symptoms.)

In their study of autistic children, Hollander and colleagues report, the frequency of high levels of D8/17-positive cells was

markedly higher in autistic subjects (78%) than in controls (21%). In addition, they say, "severity of repetitive behaviors significantly correlated with D8/17 expression, and D8/17-positive patients had significantly higher compulsion scores than D8/17-negative patients." The researchers conclude that "D8/17 expression is high in patients with autism and may serve as a marker for compulsion severity within autism."

The findings of Hollander et al. could help explain why immune system therapies reduce symptoms in a number of autistic patients. Similar treatments, including intravenous immunoglobulin and plasma pheresis, are being tested on children with PANDAS, and Swedo and colleagues report that initial results are highly encouraging.

"B lymphocyte antigen D8/17 and repetitive behaviors in autism," E. Hollander, G. DelGiudice-Asch, L. Simon, J. Schmeidler, C. Cartwright, C. M. DeCaria, J. Kwon, C. Cunningham-Rundles, F. Chapman, and J. B. Zabriskie, *American Journal of Psychiatry*, Vol. 156, No. 2, February 1999, pp. 317-320. Address: Eric Hollander, Department of Psychiatry/Seaver Autism Research Center, Mt. Sinai School of Medicine, New York, NY 10029-6574.

Risperidone useful for mood swings, aggression

Several studies indicate that risperidone (Risperdal) can alleviate autistic symptoms, and is safer than many other psychiatric drugs (see ARRI 12/3, 12/2, 11/3, 11/2, 11/1). New research by Herbert Schreier indicates that the drug also is useful in treating mood disorders and aggression.

In an open-label study, Schreier evaluated the effects of risperidone on 11 children and teenagers with a variety of disorders including autism, hyperactivity, depression, and Tourette syndrome. The children were aggressive or violent, and most suffered from mood swings suggestive of bipolar disorder. He reports that eight of the children responded well to the drug, with seven showing "moderate to marked" improvements in mood and behavior. Treatment was stopped in two children who became overly drowsy, and one autistic child with no evidence of mood disorder did not respond to risperidone treatment. (Schreier notes, however, that since this study he has treated several autistic and/or language disordered children with risperidone, with good results.)

In the children who responded to risperidone treatment, Schreier says, "clini-

cal responses were observed at times within days of receiving the medication." None of the children in Schreier's study showed behavioral deterioration while taking risperidone, and side effects were limited to sedation and weight gain. Previous studies have also reported few side effects, although some severe adverse effects (including liver, cardiac, and neurological abnormalities) have been noted by doctors prescribing the drug.

Schreier cautions that his results are limited by the lack of controls, and by the fact that seven of the eight responders were taking other drugs as well. However, he says, "Pending controlled studies, these preliminary findings suggest that risperidone—alone or in combination with mood stabilizers—may be of value in treating children and adolescents with mood disorders (especially subthreshold bipolar disorder) and aggressive behavior."

"Risperidone for young children with mood disorders and aggressive behavior," Herbert A. Schreier, *Journal of Child and Adolescent Psychopharmacology*, Vol. 8, No. 1, 1998, pp. 49-59. Address: Herbert A. Schreier, Department of Psychiatry, Children's Hospital-Oakland, Oakland, CA 94609.

Simple interventions reduce aggression toward young siblings

Autistic children who attack their siblings can cause serious injuries, and generate tremendous stress for families—especially when those siblings are small children or infants. A new study indicates, however, that even serious aggression can often be reduced by simple behavior modification techniques.

Lynn Kern Koegel and colleagues studied three sibling pairs. In each, a four- or five-year-old autistic child was exhibiting aggression (hitting, kicking, pinching, yelling, etc.) toward an infant brother or sister.

The researchers first asked parents to identify the situations in which the autistic children's aggressive acts most often occurred. Once the stimuli most often associated with aggression were identified, the parents and a clinician rearranged the children's environment to minimize these stimuli, and taught the autistic children alternative ways to handle situations associated with aggression.

In one case, for instance, the parents and clinician determined that the autistic child attacked his sibling when the infant touched the autistic child's body or his toys, or when the baby cried. The parents provided the autistic child with a basket of infant toys to give the baby, and taught the boy to hand the toys to the baby—thus distracting the baby from the boy's toys. In addition, the autistic boy was taught to locate his mother and say, "Take (baby's name)," when the baby's crying or other behaviors bothered him.

In another case, one stimulus that triggered the autistic child's aggression was the noise made when the sibling cried or kicked a metal high chair tray. The tray was replaced with a plastic tray, and the child was taught to say, "(Baby's name) needs help."

After the intervention, the researchers report, "there were large reductions in the children's aggression toward their infant or toddler sibling." In the two cases where long-term follow-up was possible, the intervention had lasting effects on the children's aggression levels. In addition, Koegel and colleagues say, both the autistic children and their families were happier at follow-up than prior to the intervention.

"Reducing aggression in children with autism toward infant or toddler siblings," Lynn Kern Koegel, Dara Stiebel, and Robert L. Koegel, *Journal of the Association for Persons with Severe Handicaps*, Vol. 23, No. 2, 1998, pp. 111-118. Address: Robert L. Koegel, Counseling/Clinical/School Psychology Program, Graduate School of Education, UC Santa Barbara, Santa Barbara, CA 93106-9490.