Biomedical update:

Immune response findings reported

Recent research (Richard Todd et al.) indicates that there is not "a generalized, ongoing, antibody-mediated, anti-brain immune response in infantile autism."

Todd and Roland Ciaranello reported earlier that a number of autistic children had antibodies against proteins present in serotonin receptor sites on their own brain cells – evidence that autism may be an autoimmune disorder, in which the body mistakes its own cells for foreign substances and attacks them. However, this study found no differences in total anti-brain antibody titers for autistic, depressed, or normal subjects.

"This suggests that if autoantigen recognition [the reaction of the immune system against its own cells] is an important feature of autism, the response is restricted to a few specific antigens," the authors conclude.

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"Antibrain antibodies in infantile autism," Richard D. Todd, Janice M. Hickok, George M. Anderson, and Donald J. Cohen; *Biological Psychiatry*, Vol. 23, 1988, pp. 644-647. Address: Richard D. Todd, Department of Psychiatry, Washington University Medical School, 4940 Audubon Avenue, St. Louis, MO 63110.

Autism, lead poisoning link?

Researchers in Missouri report that there may be a connection between autism and lead poisoning.

The researchers, who have seen six children with both autism and lead poisoning, acknowledge that co-occurrence of the two conditions may be coincidental. However, they believe lead poisoning may be a factor either in causing autism, or in aggravating pre-existing developmental problems.

"An autistic child whose inappropriate oral self-stimulatory behaviors include pica [the eating of non-food items] will be much more susceptible to lead poisoning in [a] contaminated environment," they note. "Conversely, a child whose congenital prognosis is for normal intelligence with a mild communication disorder might be reduced to mental retardation, severe communication disorder, and significant autistic features by lead poisoning."

The researchers recommend that "screening for lead poisoning be included in the routine biomedical assessment of autistic children, especially if they exhibit pica or if they reside in an area with a defined prevalence of lead poisoning." They also suggest that children with a history of chronic low-level lead poisoning be studied to see if there is an increased incidence of autism in this group.

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"Autism and plumbism: a possible association," Pasquale Accardo, Barbara Whitman, Jefferies Caul, and Ursula Rolfe; *Clinical Pediatrics*, Vol. 27, No. 1, January 1988, pp. 41-44. Address: Pasquale Accardo, Knights of Columbus Developmental Center, Department of Pediatric and Adolescent Medicine, St. Louis University School of Medicine, St. Louis, MO 63104.

Rett EEGs studied

EEGs performed on 11 girls with Rett Syndrome have revealed striking similarities, a finding which might be helpful in diagnosing suspected Rett cases.

Doris Trauner and Richard Haas performed EEGs on 11 subjects, ages four to 14, with Rett Syndrome, a disorder which occurs only in girls. Symptoms of Rett Syndrome include speech loss, autistic behaviors, seizures, small head size, eating problems, abnormal breathing patterns, loss of mobility, poor weight gain, and loss of voluntary use of the hands. A constant hand-washing, hand-wringing, or clapping movement is characteristic of the disorder.

The researchers found consistent EEG abnormalities including:

– Slow and poorly organized background activity; intermittent multifocal spike-and-wave complexes, most prominent over central and temporal regions.

– During sleep, slow and monotonous background activity with semirhythmic delta wave activity predominating; frequent multifocal spike and spike-and-wave discharges. Six patients had intermittent bursts of high-amplitude spike-and-wave or slow-wave discharges followed by attenuation of background activity; these were not accompanied by seizure activity or changes in heart rate or respiration.

The researchers note that EEG improvement was seen in study subjects treated with a ketogenic (high fat, low carbohydrate) diet or a variation, the medium-chain triglyceride (MCT) diet.

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"Electroencephalographic abnormalities in Rett Syndrome," Doris A. Trauner and Richard H. Haas; *Pediatric Neurology*, Vol. 3, No. 6, November/December 1987, pp. 331-334. Address: Doris A. Trauner, Department of Neurology H-815-B, University of California, San Diego Medical Center, 225 West Dickinson Street, San Diego, CA 92103.

Naltrexone tests: new evidence is conflicting

Two new studies using naltrexone or naloxone to treat self-injurious behavior (see previous ARRI article, Vol. 1, No. 2, 1987) show conflicting results.

Both naltrexone (which is taken orally) and naloxone (which is injected) are drugs which block opiate receptors on brain cells. Some researchers theorize that an excess of opioids, which are natural opium-like substances produced by the brain, may be a cause of self-injury and other behavior problems.

In one study, Gail Bernstein et al. found that naloxone reduced an 18-year-old boy's self-injurious behavior by 50% on three different trials. In a second, placebo-controlled, study, naltrexone caused a 33% reduction in self-injury.

Bernstein et al. speculate that the drugs may lower the pain thresholds of self-injurious individuals and/or prevent the reinforcement such individuals may receive from the release of higher levels of opioids during self-injury.

A double-blind, placebo-controlled study by Ludwik Szymanski et al., however, found that naltrexone had no effect on the self-injurious behavior of two profoundly retarded adults. One study subject received naltrexone for 12 weeks, and the other for 18 weeks.

The dosage of naltrexone used in this study was the same as, or (toward the end of one subject's trial) higher than, the highest dosage used in the Bernstein study.

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"Effects of narcotic antagonists on self-injurious behavior: a single case study," Gail A. Bernstein, John R. Hughes, James E. Mitchell, and Travis Thompson; *Journal of the American Academy of Child and Adolescent Psychiatry*, Vol. 26, No. 6, 1987, pp. 886-889. Address: Gail A. Bernstein, Division of Child and Adolescent Psychiatry, University of Minnesota, Box 95 UMHC, Minneapolis, MN 55455.

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"Naltrexone in treatment of self-injurious behavior: a clinical study," Ludwik Szymański, Jurgen Kedesdy, Steven Sulkes, and Ann Cutler, *Research in Developmental Disabilities*, Vol. 8, 1987, pp. 179-190. Address: Ludwik Szymanski, 300 Longwood Avenue, Boston, MA 02115.