Biomedical Update:

Controlling seizures can lead to psychosis

A new generation of anticonvulsant drugs is making it possible for physicians to control seizures in the vast majority of patients with epilepsy. For some patients, however, that control may come at a high price.

At a recent meeting of the American Neuropsychiatric Association, neurologist Michael Trimble described a phenomenon increasingly being observed by clinicians: the emergence of psychotic symptoms when formerly intractable seizures are brought under control. Trimble says this phenomenon, called "forced normalization syndrome," "raises the issue of the biological relevance of seizures: what does switching off seizures do to the brain?" He theorizes that suppressing seizures may cause a redirection of electrical activity, "lead[ing] to a different expression of the same underlying pathology."

One study, Trimble notes, found that of 536 psychotic episodes occurring in patients with seizure disorders, 78 (15 percent) were associated with the disappearance of seizure activity. In addition, he warns, successful control of seizures can cause other psychiatric symptoms, such as hyperactivity and depression, to emerge. These symptoms often disappear if patients are weaned off the medications and begin having seizures again.

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"Psychosis emerges when seizures controlled," Carl Sherman, *Clinical Psychiatry News*, Vol. 27, No. 5, 1999, p. 17. Address for Dr. Trimble: Institute for Neurology, Epilepsy Research Group, Institute of Neurology, 33 Queen Square, London WC1N 3BG, UK.

Asthma—or Tourette's?

Tourette's syndrome is a neurological disorder that causes chronic motor and vocal tics. Common patterns of tics seen in Tourette's, such as grunting, barking, twitching, or cursing, are fairly easy to identify, but researchers in West Virginia report that some children with Tourette's have symptoms that are easily mistaken for asthma attacks.

Pediatric immunologists Mary Beth Hogan and Nevin Wilson identified two teenagers whose chronic coughs and wheezing were initially misdiagnosed as asthma. The children were referred for neurological evaluations when asthma medications failed to reduce their symptoms. "Treatment specific for [Tourette's]," Hogan and Wilson say, "led to ablation of all symptoms."

The researchers note that only one-third of people with Tourette's exhibit classic symptoms such as echolalia and swearing, and caution doctors to be aware of less common tics such as coughing and wheezing, which "may be confused with asthma or allergy symptoms and subsequently lead to misdiagnosis."

Tourette's syndrome, which is believed to be genetically influenced, is seen in a number of children with autism. A recent evaluation of 37 autistic students at one school, for instance, found that three also had Tourette's syndrome. This rate, study author Simon Baron-Cohen and colleagues say, "far exceeds that expected by chance."

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"Tourette's syndrome mimicking asthma," Mary Beth Hogan and Nevin Wilson, *Journal of Asthma*, Vol. 36, No. 3, May 1999, pp. 253-256. Address: Mary Beth Hogan, Department of Pediatrics, West Virginia University, School of Medicine, Morgantown, WV 26506-9214.

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"Tourette's syndrome may mimic asthma," *Medscape*, June 17, 1999.

—and—

"The prevalence of Gilles de la Tourette's syndrome in children and adolescents with autism," Simon Baron-Cohen, Catherine Mortimore, John Moriarty, Jon Izaguirre, and Mary Robertson, *Journal of Child Psychology and Psychiatry*, Vol. 40, No. 2, 1999, pp. 213-218. Address: Simon Baron-Cohen, Departments of Experimental Psychology and Psychiatry, University of Cambridge, Downing Street, Cambridge CB2 3EB, U.K.

Olanzapine tried for PDD

An open-label trial of the atypical neuroleptic drug olanzapine indicates that it may reduce hyperactivity, irritability, aggression, self-injury, and other autistic symptoms, and improve social relating and mood.

M. Potenza and colleagues administered olanzapine (average dose 7.8 mg/day) for 12 weeks to eight children, adolescents, and adults with autism or pervasive developmental disorder (PDD). Of the seven patients who completed the trial, they say, six were judged to be "much improved" or "very much improved." Drug response was not correlated with age, IQ, or overall symptom severity.

The only significant side effects seen in this study were increased appetite, weight gain, and sedation. However, side effects reported in clinical trials include restlessness, tremors, and Parkinson-like symptoms.

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"Olanzapine treatment of children, adolescents, and adults with pervasive developmental disorders: an open-label pilot study," M. N. Potenza, J. P. Holmes, S. J. Kanes, and C. J. McDougle, *Journal of Clinical Psychopharmacology*, Vol. 19, No. 1, Feb. 1999, pp. 37-44. Address: M. N. Potenza, Connecticut Mental Health Center, Department of Psychiatry, Yale University School of Medicine, New Haven, CT 06519.

Unusual treatments successful for CP, neuromuscular disease

Autistic symptoms sometimes occur in the context of other neurological or neuromuscular conditions, and two novel new treatments are being studied for such conditions.

Czech researchers recently reported that injections of botulinum toxin enabled some children with cerebral palsy to regain the use of their legs. All 27 children who received the treatment showed improved muscle function, and six were able to stand upright, with support, for the first time. No adverse effects were seen as a result of treatment, which involved botulinum toxin injections at three- to four-month intervals over a course of three years.

The researchers say the toxin works by binding to nerve endings at the site where nerves and muscles meet, preventing the nerves from sending inappropriate signals to the muscles to contract. "This is the first treatment that can completely relieve spasticity in muscles disordered by cerebral palsy," study author Petr Kanovsky said.

In separate research, investigators in Canada found that creatine, a nutritional supplement popular with athletes, can increase strength in people with neuromuscular diseases. Studying 81 people with neuromuscular diseases that cause muscle weakness and atrophy, the researchers found that "their strength went up on every measurement" after 10 days of creatine treatment (at 5 to 10 grams per day).

Creatine is an amino acid found in foods. Study coauthor Mark Tarnopolsky notes that creatine-phosphate stores chemical energy in muscles and is broken down at the start of exercise, allowing muscles to rebuild their supplies of ATP (the primary energy source for short-term, high-intensity exercise). "Basically," Tarnopolsky says, "creatine gives you a bridge between one energy source and another. It allows for higher energy output for a longer period of time."

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Presentation by Petr Kanovsky, Annual Meeting of the American Academy of Neurology, April 17-24, 1999. Address: Petr Kanovsky, Masaryk University, Brno, Czech Republic.

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"Creatine monohydrate increases strength in patients with neuromuscular disease," Mark Tarnopolsky and Joan Martin, *Neurology*, Vol. 52, March 1999, p. 854. Address not listed.

Editor's note: ARRI would be interested in hearing from any parents who have tried creatine for children with Rett syndrome, which causes both autistic-like symptoms and neuromuscular problems.