Biomedical Update:

Tourette's treated with botulinum toxin

Last year (see ARRI 13/3), doctors in Czechoslovakia reported that injections of botulinum toxin could ameliorate some symptoms of cerebral palsy. A new study, this time by U.S. researchers, indicates that botulinum toxin also may be useful in reducing Tourette tics.

C. H. Kwak and colleagues administered injections of the toxin to 35 individuals with Tourette syndrome. The injections were given at the sites of troublesome tics (e.g., face, vocal cords, back, legs).

The researchers report that on a scale of 0 to 4, with 0 indicating no improvement and 4 indicating marked improvement in both tic severity and the functioning level of subjects, the mean improvement was 2.8. Effects began within days, and lasted an average of 14 weeks. In addition, the toxin markedly reduced the occurrence of the "foreboding" feelings that often precede tics.

Treatment side effects, which were temporary and mild, included neck weakness, nausea, fatigue, generalized weakness, difficulty in swallowing, voice weakness, and drooping eyelids.

Botulinum toxin is produced by the bacterium *clostridium botulinum*, the same agent that causes botulism. Injected locally, it chemically blocks the connections between nerves and target muscles at the site.

—

"Botulinum toxin in the treatment of tics," C. H. Kwak, P. A. Hanna, and J. Jankovic, *Archives of Neurology*, Vol. 57, No. 8, August 2000, pp. 1190-1193. Address: C. H. Kwak, Department of Neurology, Parkinson's Disease Center and Movement Disorders Clinic, Baylor College of Medicine, 6550 Fannin Street, No. 1801, Houston, TX 77030.

Risperidone effective, Italian study reports

An Italian study adds to evidence that risperidone (Risperdal) may be safer and more effective than many other psychotropic drugs used to treat autistic children.

A. Zuddas et al. tested risperidone on 11 individuals with autism or pervasive developmental disorder. They report that the drug "significantly ameliorated behavioral symptoms... in 10 out of 11 subjects, with the effects on core symptoms being of smaller amplitude and of slower onset." The drug continued to be effective for the six months of the study, and six months of follow-up.

Two subjects developed facial muscle movement abnormalities, which resolved after dosage reduction in one case and after drug discontinuation in the other. Other side effects included weight gain and lack of menstruation. No changes in liver function, blood test results, or EEGs were seen.

The researchers say their data indicate that "risperidone is an effective and relatively safe drug for long term treatment of behavioral disruption in autistic children and adolescents."

Editor's Note: Encouraging, but 12 months is not "long term."

—

"Long-term risperidone for pervasive developmental disorder: efficacy, tolerability, and discontinuation," A. Zuddas, A. Di Martino, P. Muglia, and C. Cianchetti, *Journal of Child and Adolescent Psychopharmacology*, Vol. 10, No. 2, Summer 2000, pp. 79-90. Address: A. Zuddas, Child Neurology and Psychiatry, Department of Neuroscience, University of Cagliari, Italy.

Autism again linked to cerebellar deficits

In the early 1990s (see ARRI 1/1), Eric Courchesne and colleagues reported an association between autism and under-development of several areas of the cerebellum. Since then, a number of studies have replicated Courchesne's findings—and a new study by Courchesne's group offers still more evidence pointing to the cerebellum's role in autism.

Autistic individuals typically exhibit less exploratory behavior than other people; for instance, an autistic child at a playground may play for hours with the same pile of sand. Karen Pierce and Courchesne studied 14 autistic and 14 nondisabled children to see if the limited exploratory behaviors seen in autistic children could be linked to cerebellar abnormalities. The researchers allowed their autistic and non-autistic subjects to play in a large room with several containers, recorded the numbers of containers the subjects investigated and the amount of time they spent exploring the room, and then correlated their findings with MRI studies of both autistic and control subjects.

"Children with autism spent significantly less time in active exploration and explored fewer containers overall than normal children," Pierce and Courchesne say. In the autistic children but not the control subjects, the researchers report, decreased exploration time correlated significantly with the degree of cerebellar under-development seen on MRI scans (related story, p. 5).

—

"Evidence for a cerebellar role in reduced exploration and stereotyped behavior in autism," Karen Pierce and Eric Courchesne, *Biological Psychiatry*, in press. Address: Eric Courchesne, Autism Laboratory, 8110 La Jolla Shores Drive, Rm. 21, La Jolla, CA 92037.

Universal screening for autism recommended

All children should be screened for autism beginning in infancy, according to new guidelines issued by the American Academy of Neurology and the Child Neurology Society.

The societies' position paper notes that the average of diagnosis of autism is six years, despite the fact that most parents of autistic children express concerns by the time their children are 18 months old, and seek help by the time the children are two. A survey of 1,300 families, guideline authors P. A. Filipek et al. say, revealed that less than 10 percent of autistic children were diagnosed by the doctor who initially saw them. Even when these children were referred to other doctors, the report notes, "only 40 percent were given a formal diagnosis., 25 percent were told 'not to worry,' and 25 percent were referred to a third or fourth professional." In addition, the report states, almost 20 percent of parents "either had to exert considerable pressure to obtain... referrals or pay privately."

Because early educational intervention can dramatically reduce symptoms of autism and even eliminate symptoms in many children, the position paper calls for a two-stage screening process to identify autism as early as possible. Initially, Filipek et al. say, all children should be screened for developmental problems during well-child screenings from infancy to school age. Children suspected of having developmental problems, they say, should be referred for secondary screening including audiologic evaluation, and lead screening. For children identified as autistic, the guidelines recommend evaluations including genetic and metabolic testing.

Editor's Note: While the report's recommendation for universal screening is welcomed, particularly in the light of the skyrocketing numbers of autistic children, its ignoring of a wide range of medical tests of demonstrable value to autistic children (e.g., immunologic and neurochemical studies, intestinal permeability studies, tests for celiac disease or food intolerance) is evidence of the medical community's failure to keep up with new developments in the diagnosis and treatment of autism. The DAN! Clinical Options Manual provides much of the missing information (cost $25.00, from ARI; CA residents ad $1.88 tax).

—

"Practice parameter: screening and diagnosis of autism. Report of the Quality Standards Subcommittee of the American Academy of Neurology and the Child Neurology Society, *Neurology*, Vol. 55, No. 4, August 2000, pp. 468-479. Full text of report: http://www.aap.org/policy/autism.html.