Vancomycin therapy reduces autistic symptoms

It sounds like an unlikely hypothesis: that antibiotic therapy could ameliorate autistic symptoms which themselves stem from antibiotic treatments. But the theory, first advanced by Ellen Bolte (see ARRI 12/4), received strong support from a recent study.

Bolte's theory is that repeated broad-spectrum antibiotic treatment for ear infections or other ailments leads to the destruction of beneficial intestinal flora—and that this, in turn, can sometimes allow toxin-producing bacteria to colonize the digestive tract. In particular, Bolte argues that chronic intestinal infection by *clostridium tetani* could produce neurological symptoms resembling autism.

To test Bolte's theory, physician Richard Sandler and colleagues administered the antibiotic vancomycin to one four-year-old boy with digestive symptoms and a history of normal development followed by autistic regression. The child improved markedly during therapy, becoming affectionate and calm, increasing his vocabulary, and becoming toilet trained. However, he regressed after treatment ended.

Sandler et al. followed this investigation with an open-label trial in which they administered vancomycin (500 mg/day) to 11 autistic children, ages 3 to 7, for eight weeks. Afterward, the children also received four weeks of priobiotic therapy, designed to restore beneficial intestinal flora.

The children were videotaped before and during vancomycin therapy, and the tapes were evaluated by a psychologist unfamiliar with the children. In addition, they were rated on behavioral and communication scales.

Eight of the children, the researchers say, benefited significantly from vancomycin therapy. "Although improvement was clear by several measures," they say, "unfortunately these gains did not endure." Most parents reported that their children's behavior deteriorated significantly within two weeks of ending vancomycin treatment, and all but one child had returned to near-baseline levels within several months. There were no significant differences between children who received the probiotic therapy and those who did not comply with this phase of treatment.

Although laboratory test results from the subjects are still being analyzed, the researchers report one unusual finding: while nearly all normal adults' stool samples contain anaerobic cocci, samples from the four autistic children whose stools have already been analyzed showed no evidence of these microorganisms.

Their data, Sandler et al. say, are "not explainable using current conventional genetic hypotheses" about the causes of autism. Instead, the researchers say, their results and those of other researchers "suggest a possible 'gut-brain' etiologic connection in a subset of these children." They hypothesize that this connection could be similar to that seen in D-lactic acidosis caused by short-bowel syndrome, in which changes in bacterial flora cause a variety of behavioral symptoms such as hostility and stupor—symptoms which can be reversed by antimicrobial therapy.

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Sandler and colleagues say the reversal of behavioral improvements in their subjects could be explained by "the offending organism being spore-forming, and hence surviving therapy to germinate after vancomycin discontinuation." Another possibility, they say, is the type or dosage of antibiotic was not sufficient to kill the organism.

Because the benefits of vancomycin were short-term, the researchers do not suggest that physicians institute vancomycin therapy with autistic patients. However, they say, "these results indicate that a possible gut flora-brain connection warrants further investigation, as it might lead to greater pathophysiologic insight and meaningful prevention or treatment in a subset of children with autism."

Editor's Note: The problem is fear that vancomycin-resistant "super-bugs" will evolve. No one will invest money in the obvious alternatives—naturally occurring antibiotics and immunity-enhancing nutrients—since such products are not patentable and thus not profitable.

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"Short-term benefit from oral vancomycin treatment of regressive-onset autism," Richard H. Sandler, Sydney M. Finegold, Ellen R. Bolte, Cathleen P. Buchanan, Anne P. Maxwell, Marja-Liisa Väisänen, Michael N. Nelson, and Hannah M. Wexler, *Journal of Child Neurology*, Vol. 15, 2000, 429-435. Address: Richard Sandler, Section of Pediatric Gastroenterology and Nutrition, Rush Children's Hospital, Rush Medical College, 1725 W. Harrision Ave., Suite 946, Chicago, IL 60612.

ARI maintains a list of physicians who use drugs only as a last resort, and who are interested in the DAN! approach to diagnosis and treatment. If you are a physician who should be on that list, send a self-addressed, stamped envelope with a request for our "Doctor Referral List Questionnaire."

Concerns rise over mercury in vaccines

(continued from page 1)

ated with mercury exposure [in this study] have been found at increased frequency in long-term follow-up studies of children exposed in utero to modest levels of methylmercury."

—Researchers investigating the effects of mercury are concerned by a new study of Faeroe Island children by U. Steuerwald et al., showing that a ten-fold increase in cord-blood mercury concentration, due to high maternal consumption of fish containing methylmercury (a different form of mercury than the ethylmercury in vaccines), was associated with subtle neurological deficits. One finding of the study: that intermittent, large doses of mercury may be more harmful than constant, low-dose exposure. This may be relevant to vaccine risks, as children can receive more than 125 times the permissible daily maximum exposure of mercury from vaccinations given in a single day. ***(Editor's note: At a Congressional hearing on vaccine safety in August 1999, Congressman Dan Burton stated that his grandson—who became autistic following routine vaccinations—received, in one day, 41 times the level of mercury considered permissible in adults. Lyn Redwood, an RN whose child also became autistic following multiple vaccinations, has calculated that her child received 125 times the maximum permissible daily exposure in one day of vaccinations.)***

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In the face of growing public alarm over the mercury in vaccines, which escalated following last year's admission by the federal government that fully vaccinated children may receive amounts of mercury that exceed federal limits on mercury exposure (see ARRI 13/3), the CDC has encouraged manufacturers to produce thimerosal-free vaccines. However, it is urging physicians to continue

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