Biopsy Data Refute MMR Vaccine and Autism Link

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The measles, mumps, and rubella vaccine was not associated with a diagnosis of autism in children aged 3-10 years, based on data from 25 children with autism and 13 controls.

These findings contradict the results of a 2002 study in which traces of the measles virus were found in biopsies from the bowel tissue of children with autism. The data from the 2002 study suggested that the live virus from the measles, mumps, and rubella (MMR) vaccine would lodge and grow in a child's intestinal tract, causing damage there. The hypothesis was that the virus also would cause inflammation and damage to the central nervous system, resulting in autism symptoms. But if this theory was correct, then tissue biopsies from autistic children should show traces of the MMR vaccine, whereas biopsies from control children without autism should not, the researchers noted.

The current study also refutes a decade-old study that first suggested that the onset of behavioral abnormalities in a small group of children who had autism spectrum disorders and GI problems coincided with their having received the MMR vaccine.

To identify a possible link between measles virus in the GI tract and autism, Dr. Mady Hornig of Columbia University, New York, and colleagues examined bowel tissue from children with autism spectrum disorders and GI problems. They compared the biopsies with bowel tissue from children who had GI problems but did not have autism (PLoS ONE 2008;3:e3140).

The researchers found no significant differences in the presence of RNA from the measles virus in the biopsies from the autistic children, compared with the children who weren't autistic. All the children had received the MMR vaccine, but the researchers found trace amounts of measles RNA (fewer than 10 copies) in only one child with autism and one control child. Autism diagnoses were confirmed by child neurologists, psychiatrists, or developmental pediatricians.

The average age of the autism and control groups at the time of the first MMR vaccination was 15 months and 16 months, respectively, and the average interval between the MMR vaccination and the tissue biopsy was 41 months and 40 months, respectively.

In this study of 25 children with autism and 13 controls, a chi square analysis 'indicated no role for MMR in … the pathogenesis of autism or GI dysfunction.'

A total of 12 of the 25 autistic children (48%) received MMR vaccine before their GI problems began, compared with 3 of 13 controls (23%). But this difference was not statistically significant. Children with autism who received the first MMR vaccine before the onset of their GI problems were significantly older when their GI problems began, compared with the children with autism who had GI problems before they received the vaccine. By contrast, children with GI problems before their autism diagnoses were significantly younger than children who developed GI problems after they were diagnosed with autism. A chi square analysis "indicated no role for MMR in either the pathogenesis of autism or GI dysfunction," Dr. Hornig and colleagues noted.

"If MMR is causally related to either GI disturbances or autism it should precede their onset," the researchers wrote. Instead, they found that the order of MMR vaccine administration, the onset of GI problems, and the onset of autism was "inconsistent with a causal role for MMR vaccine as a trigger or exacerbator of either GI disturbances or autism," they explained.

The study was limited by the small group of children, but no previous studies have examined the tissue from children with autism and GI problems specifically to assess links to vaccines.

The characteristics of GI problems within the population of children with autism remain unclear, and more research is needed to determine any relationships between vaccines and autism spectrum disorders.

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Dr. Hornig stated that she had no relevant financial conflicts to disclose. ■

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