The UCLA-University of Utah Epidemiologic Survey of Autism: Prenatal, Perinatal, and Postnatal Factors

Anne Mason-Brothers; Edward R. Ritvo, MD; Carmen Pingree, MS; P. Brent Petersen, MD; William R. Jenson, PhD; William M. McMahon, MD; B. J. Freeman, PhD; Lynn B. Jorde, PhD; Mary J. Spencer, MD; Amy Mo; and Anne Ritvo, MD

From the Division of Mental Retardation and Child Psychiatry, Department of Psychiatry, University of California at Los Angeles, and the University of Utah, Salt Lake City

ABSTRACT. In a recent epidemiologic survey conducted in Utah, 241 autistic patients (DSM-III criteria) were found. Medical records of 233 autistics were surveyed for the presence of 36 potentially pathologic prenatal, perinatal, and postnatal factors. These results were compared with those of an identical survey of 62 of their nonautistic siblings, with the results of four previously published surveys, and with normative data. No potentially pathologic factor or group of factors occurred significantly more frequently among the autistic patients. Also, previous observations of significant differences in the occurrence of certain factors in the histories single vs multiple siblings with autism were not confirmed, with the exception of increased viral-type illness during gestation in single-incidence cases. Thus, the etiology of the brain pathology that characteristically disrupts normal development and produces the syndrome of autism remains obscure. Other data from the epidemiologic survey, however, suggest that the role of genetic factors needs to be explored further. *Pediatrics* 1990;86:514–519; *autism, epidemiology, natal factors.*

Previous studies of potentially pathologic natal factors have failed to identify any consistent factor or combination of factors that apparently could contribute to the etiology of autism.[1–32] Studies conducted before 1980 were hampered by the unavailability of standardized diagnostic criteria (DSM-III); other studies were hampered by having to rely on parental reports. Fortunately, however, several of the more recent surveys used strict diagnostic criteria and data were based on direct analysis of medical records.[21,23,27,32]

In our previous survey of 181 autistic patients,[32] we showed that in families with single cases of autism there were significantly greater occurrences of bleeding, flu-like symptoms, and medications during the patients' mothers' pregnancies than in families with more than one autistic sibling. Also, we found significantly fewer occurrences of spontaneous labor in the single autistic sibling families.

Since our previous survey, three new studies have been published. Levy et al[33] compared the medical records of 59 autistics (DSM-III criteria) with those of 28 nonautistics matched for IQ. Abnormal presentation at birth was the only factor that occurred significantly more often in these autistics. Bryson et al[34] compared 17 autistics (DSM-III criteria) with 10 siblings, 34 normal control subjects (17 cronological age matched and 17 mental age matched), and 17 IQ-matched control subjects. Meconium staining and suboptimal Apgar scores at 5 minutes occurred significantly more often in the autistics than in their siblings and normal control subjects, but not more often in the IQ-matched control subjects. Laxer et al,[35] in a European sample, found no specific event significantly associated with autism except increases in postmaturity, encephalitis, and seizures in autistics compared with subjects with Down's syndrome.

The present study was undertaken to enlarge our data base in the search for possible etiologic factors in certain cases of autism. It is unique in that it covers an epidemiologically surveyed population, uses uniform diagnostic methods applied on a blind basis, and is based solely on abstracted medical records.

Received for publication Aug 28, 1989; accepted Oct 27, 1989.
Reprint requests to Neuropsychiatric Institute, 760 Westwood Plaza, Los Angeles, CA 90024.