Brief Report: A Case-Control Study of Obstetric Complications and Later Autistic Disorder

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The precise etiology of autism remains unclear. Obstetric adversity has been described as one factor that may increase the risk for the disorder. We examined the contemporaneous birth records of 49 children satisfying DSM-III-R criteria for autistic disorder, at four Dublin maternity hospitals, using the previous same-sex live birth in that hospital as a control. Data were evaluated blind to subject status using two obstetric complication (OC) rating scales. No significant differences in obstetric adversity were found between index and control groups. Autistic individuals did not differ from controls in terms of previously described risk factors for this disorder (maternal age, maternal parity, birth order, and low birth weight) in autism. These data do not support the view that OCs increase the risk for later autism.

Autism is now considered a biologically determined behavioral syndrome, characterized by qualitative impairment in reciprocal social interaction and communication, with restricted, repetitive, and stereotyped patterns of behavior, interests, and activities, with onset occurring before 36 months of age (Bailey, 1993). The recently estimated prevalence of 10 per 10,000 population is higher than previous estimates, and there is a male preponderance (Gillberg, 1990). Mental retardation is reported in 75% of patients.

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(Lockyer & Rutter, 1969) and epilepsy is reported in 5–35% (Gillberg, 1990). Twin and family studies have provided substantial evidence for a genetic component to the etiology of this disorder (Bailey, 1993). The overall recurrence risk is estimated at between 2–8.6% for each sibling born after an autistic child, which is considerably greater than the general population risk (Ritvo et al., 1989; Smallay, Asarnow, & Spence, 1988). Medical conditions may co-occur with autism including the fragile X syndrome, tuberous sclerosis, neurofibromatosis, rubella embryopathy, and the Rett syndrome in girls (Gillberg, 1990).

Gillberg (1990) hypothesized that the syndrome of autism is induced by an interaction of genetic factors and environmentally based brain damage. One potential source of such environmentally induced brain damage is obstetric adversity. Several studies have examined the occurrence of perinatal stress in autistic patients compared with controls, and identified either single factors, such as increased maternal age (Lobascher, Kingerlee, & Gubbay, 1970), high risk birth order, either firstborn or fourth- or later born (Kolvin, Ounstead, & Roth, 1971), bleeding in pregnancy (Torrey, Hersh, & McCabe, 1975), dysmaturity (Knobloch & Pasamanic, 1975), pre/post maturity (Finnegan & Quarrington, 1978), low birth weight (Deykin & MacMahon, 1980), use of medication during pregnancy (Gillberg & Gillberg, 1983), and instrumental delivery (Bryson, Smith, & Eastwood, 1988), as significantly more often associated with autism, or when added, result in increased scores for “suboptimality” in the pre-, peri-, and neonatal periods of individuals with autism.

However, no single risk factor has been identified by all of the studies, and some contain a variety of potentially confounding methodological problems, including nonuniformity of diagnostic criteria, possible effects of selection and recall bias (Deykin & MacMahon, 1980; Finnegan & Quarrington, 1978; Knoblock & Pasamanic, 1975; Kolvin et al., 1971; Lobascher et al., 1970), modest sample sizes (Torrey et al., 1975), and choice of control group, unaffected siblings (Bryson et al., 1988; Deykin & MacMahon, 1980; Finnegan & Quarrington, 1978), children with other neurological conditions, or matched for intelligence quotient (IQ) (Bryson et al., 1988; Knoblock & Pasamanic, 1975; Piven et al., 1993; Torrey et al., 1975).

Furthermore, other investigators have either failed to differentiate patients with autism from controls either in the occurrence of single perinatal factors, or in combined suboptimality (Levy, Zoltak, & Saelens, 1988; Mason-Brothers et al., 1990; Piven et al., 1993).

In view of such contradictory findings we decided to examine the possible relationship between obstetric complications (OCs) and autism using a case-control design with strict diagnostic criteria, and recognized rating scales applied to contemporaneous birth records.