Parental Reproductive Problems and Gestational Hormonal Exposure in Autistic and Schizophrenic Children

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The incidence of infertility and two or more spontaneous abortions was significantly increased in the parents, compared to that reported for the general population, in this pilot survey of 61 patients evaluated for major childhood psychoses. In addition, 18% of our patients had a history of early gestational exposure to progesterone/estrogen compounds (9 patients) and to cortisone (2 patients). This frequency of gestational hormonal exposure was significantly increased over that in normal infants from three published surveys. However, in 5 of the 11 patients with gestational hormonal exposure, the medication was prescribed because of prior parental reproductive problems or bleeding during the current pregnancy. Therefore, it cannot be concluded that the gestational hormonal exposure was causally related to the psychoses present in these patients. In order to obtain more conclusive data, there will need to be continued monitoring of parental reproductive histories and gestational environmental exposures in autistic and schizophrenic children.

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Previous studies suggest that a variety of exogenous steroid hormones may adversely affect fetal development. Early gestational exposure to progestational agents and estrogens has been associated with limb (Janerich, Piper, & Glebatis, 1974; Nora, Nora, Blu, Ingram, Fountain, Peterson, Lortscher, & Kimberling, 1978), cardiac (Nora et al., 1978; Heinonen, Slone, Monson, Hook, & Shapira, 1977; Janerich, Dugan, Standfast, & Strite, 1977), and genital malformations (Gill, Schumacher, & Bibbo, 1976; Aarskog, 1979), and prednisone exposure has been associated with intrauterine growth retardation (Reinisch, Simon, Karow, & Gandelman, 1978). Prenatal exposure to progestagen and estrogen has been associated with microcephaly (Goujard & Rumeau-Rouquette, 1977) and was reported in four patients with neurological conditions, including two with mental retardation (Nora et al., 1978).

However, in most of these studies it is not entirely clear whether the drugs themselves or the reasons for their prescription were related to the abnormal fetal development (Wilson & Brent, 1981). In the current report we describe the incidence of prenatal steroid hormone exposure, and of parental reproductive and obstetrical factors, among patients referred for evaluation of infantile autism and other major childhood psychoses.

**METHODS**

This investigation was carried out as part of a larger series of studies ongoing in our Clinical Research Center (CRC) for the Study of Childhood Psychosis. The patients were seen between January 1978 and December 1979. Prenatal and parental reproductive histories were obtained by parent interview and confirmed by obstetrical records whenever possible. This information was not known at the time patients were selected for the study. Two sets of concordant male identical twins (without hormone exposure) were counted as two rather than four patients. Diagnoses were made by adhering to the criteria stated in the American Psychiatric Association’s (1980) *Diagnostic and Statistical Manual-III* classification.

The expected rate of gestational exposure to exogenous steroid hormones was obtained from control data from three previously reported surveys. In each of these surveys the control sample consisted of normal infants born during the same period of time (early and mid-1970s) as the patients in the current study, and in comparable statewide or metropolitan areas. There may have been underreporting of gestational events in normal children from the surveys done postnatally (Janerich et al., 1974; Rothman, Fyler, Goldblatt, & Kreidberg, 1979), but this should have been less of a problem in the survey where gestational events were reported as early as