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Autism and Infection/Immunization Episodes in Japan

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The possible association of autism with infection or immunization has been reported since the 1970s. Tanoue et al. reported, on the basis of their birth cohort, that the births of autistic children were more frequent among those born in April-June, and that more frequent bronchitis/pneumonia hospitalization occurred when a higher prevalence of autistic children was recorded (4). Kawashima et al. reported that three of nine autistic children born in United Kingdom were positive for measles H gene as determined by RT-PCR (5).

The prevalence of autism in Japan during the 1980s was 5-16 per 10,000, and 21.1 in 1996 (7). This apparent increase of autism in 1996 was difficult to interpret, because it may have been due to the recent improved screening in routine health checkups, the existence of atypical or "temporary" autism and other pervasive developmental disorders (e.g., DSM III, III-R, IV) (8), or increased awareness of high function autism (i.e., IQ>70) (6). No conclusion has yet been obtained (9).

More recently, the possible involvement of mumps-measles-rubella (MMR) vaccination in autism has been raised (1-3). The MMR vaccine was introduced in 1989 in Japan. The vaccination program was unsuccessful on account of the higher incidence of the associated aseptic meningitis, and, in 1993, the Ministry of Health and Welfare dissuaded continuation of MMR vaccination (10). In 1989-1992, 2.2 million doses of MMR vaccine and 3.0 million doses of monovalent measles vaccine (MMV) were distributed in Japan (11). The sale of MMR and MMV vaccines and its relationship to the reported prevalence of autism in Japan is shown in Fig. 1. Kawashima et al. claimed that the symptoms developed soon after MMR vaccination in the majority of autistic cases (5). Tanoue et al. reported 90% of autistic children are diagnosed by the age of eight (4).

The 1988/89-birth cohort received approximately 1.3 million doses of MMR vaccine and 1.7 million doses of MMV vaccine. A case-control study of this population will be of value for elucidating a possible relation between autism and the vaccination. It should be noted, however, that a matched case-control study using the United Kingdom General Practice Research Database was inconclusive as additional information provided by parents was indispensable in minimizing bias and confounding (12).

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