Speedy, Sensitive, and Specific Diagnosis of Pertussis by Using Serum and the Sensitized-Particle Test

In their recent communication, Aoyama et al. (1) reported that they were successful in obtaining a serological diagnosis of pertussis by using *Bordetella pertussis* toxin (PT)-sensitized porous, spherical, poly(γ-methyl-1-glutamate) particles. The particle agglutination test (KPA) was standardized for detection and quantification of immunoglobulin G (IgG) against PT by comparison of serological results with those obtained by indirect enzyme-linked immunosorbent assay and the microagglutination test. Obviously, an IgG anti-PT serologic test would be of immense utility in seroepidemiological investigations and monitoring of community response to pertussis vaccination; it would require appropriate technological modification to detect anti-PT IgM. The modified technique, upon its standardization to detect IgM anti-PT antibody, would be of great utility for specific diagnosis of pertussis during the early phase of infection.

The KPA, upon its standardization to detect IgM anti-PT, would, apart from its utility for infants (1), be of great use in diagnosis of pertussis among preschool children, adolescents, and adults. In The Netherlands, there has been an increase in the percentage of notifications of pertussis among those aged 20 years or more, from 5% during 1989 to 11% during 1996 (2). Moreover, a resurgence of pertussis has been noticed in Canada since 1991 (3) and in the United States since the late 1980s (2). A KPA in IgM format would be ideal for detection of resurgence of *B. pertussis* strains that were antigenically distinct or less sensitive to immunity induced by vaccines of the 1970s and 1980s. An IgM protocol should also elucidate interference, if any, during simultaneous administration of acellular pertussis vaccine with other vaccines, like conjugated *Haemophilus influenzae* type B, or the preexposure cell culture rabies vaccine during infancy.

REFERENCES


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