

Thesis Title The Study of Agglutinin Levels Against Bordetella pertussis Standard Strain, Vaccine Strain and Local Strain L021 in Infants After Complete Vaccination.

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ABSTRACT

The purposes of this study are to determine the levels of pertussis agglutinin of Bordetella pertussis standard strain, vaccine strain and local strain L021 by Manc Clark's microagglutination method in infants who had been vaccinated with three doses of DTP, to compare the geometric mean titers (GMTs) of local strain L021, vaccine strain and standard of B. pertussis. The effect of sex on the GMTs is also evaluated.

Blood and sera were collected from 101 infants, about 9 months of age, and had been completed 3 doses of DTP vaccination they had normal growth and development, attended at the well baby clinic of Pediatrics

Department, Faculty of Medicine Ramathibodi Hospital, Mahidol University between September 1985 to March 1986. Laboratory works of pertussis agglutinin determination were conducted at Microbiology Department, Faculty of Public Health, Mahidol University, the three diagnostic antigens were prepared by The Biological Products Division, The Government Pharmaceutical Organization, Ministry of Public Health.

The results revealed that all infants processed the geometric mean titers of the three strains of B.pertussis of vaccine strain, standard strain and local strain L021 were 1:64.22, 1:103.83 and 1:171.36 respectively and number of infants who yielded the agglutinin titers of $> 1:320$ were 10, 22 and 39 cases. The agglutinin titers of the three strains were statistical difference ($p < 0.05$). Male and female were not statistical difference in the agglutinin titers ($p > 0.05$).

This study revealed that the pertussis vaccine currently used could induce agglutinin comprised the three studied strains. The GMTs were relatively low and did not reach to the level of 1:320 which is suggested protective level. In fact agglutinin measuring is an indirect measurement of pertussis immunity. The efficacy of the pertussis vaccine could not clearly demonstrated.

The vaccine production and evaluation are still need ways of purify and suitable laboratory tests.