

Thesis Title ELISA for Seroepidemiological Studies of Exposure to Vibrio cholerae and Shigella flexneri of Population in Krabi Province, Thailand

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Degree Master of Science (Public Health)
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Date of Graduation 28 October B.E. 2534 (1991)

ABSTRACT

Study was designed to determine serum antibodies to lipopolysaccharides (LPS) of Vibrio cholerae by indirect ELISA and of Shigella flexneri by dot-ELISA. The aims of study were to assess the seroprevalence of both infections in residents of Krabi Province and to gain some baseline epidemiological information. A total of 363 single serum samples were obtained from cord blood of newborns delivered at Krabi Hospital and from venous blood of healthy persons aged from 6 months to over 50 years, and sex ratio was 1:1. A studied population had no history of diarrhea, cholera, or dysentery during the past 6 months. The serum samples were collected during January 1989 to December 1990. The seroprevalence of V. cholerae exposure in the forms of IgG and IgM

of anti-LPS were 65% and 64%, respectively. The prevalence of both isotypes of specific antibodies were found initially during the first 6 months of age. The highest prevalence rates of IgG and IgM antibodies were in the age groups of 30-49 years (98%) and 15-29 years (90%), respectively. The highest mean levels of specific IgG and IgM were also found in these two age groups.

The seroprevalence of specific IgG and IgM antibodies to S. flexneri LPS were 60% and 22%, respectively. The IgG prevalence was initially detected at 3-4 years old and then rose sharply with age. In contrast, the IgM prevalence was detectable earlier than the IgG prevalence, i.e. at 6 months of age but with much lower rate than the IgG. The highest prevalence of the IgG and IgM antibodies were also in the age groups of 30-49 years (90%) and 15-29 years (45%). The highest mean levels of IgG and IgM antibodies were found in the age groups of 30-49 years and 10-14 years, respectively.

Seroprevalence of V. cholerae infection was higher among housewives than other occupations. The IgM prevalence was higher in the female muslims than in the buddhists and vice versa for the IgG. The prevalence rate was found to be correlated with the income of family, home location (inland and island or seashore), methods of food protection after cooking and water supply. S. flexneri exposure as detected by the serological assay was statistically high among males, buddhists, businessmen, and low educated females. The prevalence rate of this infection was not associated with the income of family, home location, eating behavior or water supply.