

Prevalence of Anti-dengue HAI Antibody in Bangkok Infants

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OBJECTIVES :

1. To establish the age-specific prevalence of anti-dengue antibody in Bangkok infants.
2. To estimate the rate of disappearance of passively acquired maternal anti-dengue antibodies.
3. To estimate the prevalence of actively acquired anti-dengue antibody in Bangkok infants.

BACKGROUND : The age-specific attack rate of dengue hemorrhagic fever (DHF) is biphasic, with the main peak modal age of 5 to 6 years and a smaller peak with a modal age of 7-12 months. Halstead's demonstration of enhanced dengue virus growth in leukocytes by very low levels of homologous or heterologous anti-flavivirus antibody has led to an examination of the role of passively acquired maternal antibody in DHF in infants.(1). This study was undertaken to accurately estimate the decay kinetics of maternal anti-flavivirus antibody in Bangkok infants.

METHODS : As part of a study on the prevalence of anemia in normal children, infants attending a well baby clinic at Bangkok Children's Hospital on Wednesday afternoons during June through August 1979 were subjected to finger lancing and blood collection. Three to five 70 microliter capacity capillary hematocrit tubes were collected from each patient, and after hematocrits were determined by centrifugation, the tubes were scored and broken just above the buffy coat to retrieve the serum layer. Twenty-five microliters of serum was then acetone extracted and assayed for HAI activity against D1, D2, D3, and D4 antigens by the standard AFRIMS microliter technique.

RESULTS : 24 of 24 (100%) of infants 2 months old or younger had detectable HAI to at least one dengue virus type antigen. The proportion of antibody positive infants steadily declined until age 7 months; none of 22 infants between 7 and 10 months old had detectable antibody. Two of 14 (14%) of infants

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11 to 18 months old had antibody; in these 2 children the antibody was probably acquired actively through infection rather than transplacentally.

This study will continue until sera from approximately 500 children have been tested. Other antibody determinations (e.g. anti-HAV) are planned for these sera.

REFERENCES

1. Halstead, S.B., O'Rourke, E.J.: Dengue Viruses and Mononuclear Phagocytes I. Infection Enhancement by Non-Neutralizing Antibody. J. Exp. Med. 146: 201-229, 1977.

