A Serological Survey for Togaviruses (Arboviruses) in a Well Defined Rural Thai Population

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OBJECTIVE : To study the seroepidemiology of Togavirus (arbovirus) infections in a well defined rural Thai population.

BACKGROUND : Dengue virus was first specifically identified as a cause of illness in Thailand in the early 1950's. At that time, and for many years thereafter, it was felt that dengue infections were endemic only in the large cities. More recently, it has been recognized that dengue infections also occur in rural populations. However, little is known of the prevalence of arbovirus antibody in rural Thailand, as most studies done outside of cities involved areas of epidemic illness.

As sera were already being collected from village populations for malaria and hepatitis studies, a serological survey for arbovirus infection was included

MATERIALS & METHODS : The materials and methods for this study are outlined elsewhere in this report (The Epidemiology of Hepatitis B Virus in a Well Defined Rural Population). Serum was submitted for routine hemagglutination inhibition tests using an alpha virus (arbovirus group A) antigen, chikungunya (chik) and flavivirus (group B arbovirus) antigens, dengue 1-4 (DEN 1-4) and Japanese encephalitis (JE).

RESULTS : Of a total population of 1041 people in the village, sera from 526 had been tested by the time of this report. Of these, 230 sera were obtained from people from age 1 to 10. This age group made up over 60% of the village population. The prevalence of antibody to chikungunya in the whole population was 19.2%; it was 6.1% in the tested children ten years old or less and rose to 54.5% by the 40-49 year age group, remaining at that level in the few older persons studied. The flavivirus antibody, on the other hand, rose rapidly, starting at 20% in the few one year olds bled but reaching 89.2% by the age of four years and remaining over 80% for all but one of the remaining age groups.

This data serves as a good comparison to that collected in Bangkok in 1962 and 1977 and illustrates that flaviviruses transmission is much more rapid in rural environments than in Bangkok. The antibody prevalences to flaviviruses are very similar to those found in Phnompenh in 1974 (1).

The collection of materials from the village of Tablan is finished.

This report presents preliminary data as the laboratory tests are still underway.

Prevalence of Togavirus Antibodies in a Well Defined Thai Rural Population.

Age	No. Tested	Alpha Virus[a] Antibody		Flavivirus[b] Antibody	
		No.	(%)	No.	(%)
1	5			1	(20.0)
2	15			4	(26.0)
3	23			6	(21.0)
4	37	2	(5.4)	33	(89.2)
5	21			17	(80.9)
6	35	2	(5.7)	29	(82.9)
7	35	4	(11.4)	30	(85.7)
8	24	1	(4.1)	17	(70.8)
9	24	3	(8.3)	20	(83.3)
10-14	54	13	(24.0)	47	(87.0)
15-19	52	6	(11.5)	45	(86.5)
20-29	92	22	(23.9)	85	(92.4)
30-39	55	20	(36.4)	541	(98.2)
40-49	33	18	(54.5)	33	(100.0)
50	22	12	(54.5)	20	(90.9)
	526	103	(19.6)	441	(83.8)

[a] Chikungunya

[b] Dengue 1-4 and Japanese encephalitis

REFERENCES :

1. Scott, R.M., Snitbhan, R., Bancroft, W.H., Prevalence of Some Viral Infections in the Residents of Phnom-penh. SEATO Medical Research Laboratory Annual Report, 1975, pp. 82-83.