

SEROLOGIC EVIDENCE OF UNUSUAL JE COMPLEX FLAVIVIRUSES ALONG THE THAI-MYANMAR BORDER

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Epidemiologic studies of febrile illness syndromes are revealing previously unrecognized pathogens regionally and globally. The Department of Immunology and Medicine at AFRIMS has an ongoing 3-year study of unspecified febrile illness among the mountainous regions of the Thai-Myanmar border in Sangkhlaburi, Thailand. Japanese Encephalitis (JE) complex flavivirus infections were screened using a hemoagglutination inhibition (HAI) assay. Serial surveillance of a cohort of 369 Karen and Mon villagers in 1999-2000 revealed 53 (14%) with very high titers ($\geq 1:640$ by HAI) to West Nile virus (WNV) with markedly lower titers to JE. Moreover, of 11 seroconversions, 6 had titer profiles suggestive of West Nile or similar virus in the JE complex. In a simultaneous prospective study of febrile diseases in 600 adults, no viral encephalitis or meningitis was noted, but 6 cases of possible JE complex seroconversions with a febrile syndrome occurred by IgM and IgG JE ELISA. Symptoms included fever, malaise, headache, myalgias, and URI symptoms or nausea in some cases. Based on these serologies, a sentinel animal surveillance program was set up using flavivirus-naïve pigs, ducks and chickens in the rainy season of 2001. 50% of ducks and most pigs seroconverted with the majority of seroconversions by day 21 in the field. No definitive chicken seroconversions occurred during an 8-week surveillance period. While many HAIs among the ducks revealed balanced titers between JE and WNV, 11 isolates had repeatedly higher titers to WNV. 30 of 77 pigs had higher titers to WNV as well. A total of 28 duck and 10 pig isolates from one week prior to seroconversion showed viral growth in C6/36 cells. Further characterization of these isolates is underway.

**51st Annual Meeting of the American Society of Tropical Medicine and Hygiene.
Denver, Colorado, USA. 10-14 November 2002.**
