Jamestown Canyon Virus: Seroprevalence in Connecticut

To the Editor: *Jamestown Canyon virus* (JCV), a member of the California serogroup, has a wide geographic distribution throughout much of temperate North America. It causes mild febrile illness and, rarely, aseptic meningitis or primary encephalitis (1). JCV has been isolated from mosquitoes each year that surveys have been done in Connecticut, and 28 positive pools from 10 mosquito species were found during 2000 (T. Andreadis, pers. commun.). In contrast, only 14 positive mosquito pools were found to contain *West Nile virus* (WNV), which has recently been introduced into Connecticut (2). JCV has been isolated from *Aedes* mosquitoes in Connecticut, and serologic evidence suggests it is widespread in deer (3,4). No recent seroprevalence surveys have been done in Connecticut, nor have any human cases of infection or disease due to JCV been documented.

We report the results of two seroprevalence surveys done with standard indirect fluorescent assays (IFA) to detect immunoglobulin G antibodies to JCV. One survey examined 1,086 sera collected in 1990 from blood donors. The second survey examined 1,016 sera submitted to the Connecticut State Public Health Laboratory in 1995.

The IFA used JCV-infected baby hamster kidney cells (BHK-21). Infected and uninfected cell suspensions were air dried and fixed onto Teflon-coated, 12-well slides. Prepared slides were stored at -70°C. Sera were tested at a minimum dilution of 1:16. After incubation and washing of the fluorescein-conjugated counterstain, slides were dried and examined by fluorescent microscope (American Optical, Buffalo, NY). The positive human control serum was designated as the 4+ baseline with which the test sera were compared. Selected sera were tested by a serum dilution plaque reduction neutralization test (PRNT) assay with JCV, *La Crosse virus*, and trivittatus virus.

Of the 1,086 sera collected from blood donors in 1990, 164 (15%) were positive by IFA at a minimum dilution of 1:16. Because IFA screening procedures are known to have poor specificity, a subset of 39 IFA-positive and 5 IFA-negative sera was tested by PRNT. None of the IFA-negative sera were positive, while 26 (67%) of the 39 IFA-positive sera were positive for JCV antibodies. Extrapolating the PRNT results to the 164 IFA-positive sera yields an overall positivity rate of 10.1%.

The second serosurvey, performed on 1,016 sera collected in 1995 from apparently healthy patients requesting immune status testing to viruses such as *varicella zoster* or measles, had 57 IFA-positive specimens. Extrapolating addi-

tional PRNT results from 26 sera, of which 18 (69%) were positive, yields a 3.9% positivity rate.

In addition to our study, with crude seroprevalence rates ranging from 3.9% to 10.1%, another recent study demonstrated JCV antibodies in 2.9% to 13.3% of ill persons in Massachusetts (Tonry J et al., unpub. data). Although the screening results of our first serosurvey (10.1% positive) differed widely from those of the second serosurvey (3.9% positive), even the lower rate indicates substantial levels of human infection in Connecticut.

This report suggests that JCV infection is fairly frequent in Connecticut and that illness may occur, as corroborated by data from neighboring Massachusetts (Tonry J et al., unpub. data) and unpublished laboratory findings from the Connecticut State Public Health Laboratory. The interest in arboviral disease will continue unabated, spurred by the continued occurrence of WNV, and systematic testing for JCV infection may be timely, at least throughout the northeastern United States.

Donald Mayo,* Nick Karabatsos,† Frank J. Scarano,‡ Timothy Brennan,* Daniel Buck,§ Terry Fiorentino,§ John Mennone,§ and San Tran§

*Connecticut Department of Public Health Laboratory, Hartford, Connecticut, USA; †CDC Division of Vector-Borne Infectious Diseases, Fort Collins, Colorado, USA; ‡University of Massachusetts Dartmouth, Dartmouth, Massachusetts, USA; and §Yale University Department of Epidemiology and Public Health, New Haven, Connecticut, USA

References

1. Grimstad PR. California group virus disease. In: Monath TP, editor. Arboviruses Vol. II. Boca Raton (FL): CRC Press 1988. p. 99-136.
2. Centers for Disease Control and Prevention. 2000 update: West Nile virus activity. MMWR Morb Mortal Wkly Rep 2000; 49:1044-7.
3. Zamparo JM, Andreadis TG, Shope RE, Tirrell SJ. Serologic evidence of Jamestown Canyon virus infection in white-tailed deer populations from Connecticut. J Wildl Dis 1997;33:623-7.
4. Sprana HE, Main AJ, Wallis RD. Jamestown Canyon virus in Connecticut. Mosq News 1978;38:392-5.