

Comparison of neutralizing antibody titers against Japanese encephalitis virus genotype V strain with those against genotype I and III strains in the sera of Japanese encephalitis patients in Japan in 2016.

Takahiro Maeki^{1*}, Shigeru Tajima¹, Aung Kyaw Kyaw², Fumiaki Matsumoto³, Kana Miura³, Ayaka Yamashita³, Akira Yoshikawa³, Kodai Negishi⁴, Yuji Noguchi⁴, Koh Tadokoro⁵, Koji Abe⁵, Junko Taruya⁶, Jinsoo Koh⁶, Hidefumi Ito⁶, Asaka Ikegaya⁷, Fuyuki Abe⁷, Mieko Wada⁸, Tsuyoshi Nishigata⁹, Makiko Ikeda¹, Fumihiro Kato¹, Satoshi Taniguchi¹, Eri Nakayama¹, Tomohiko Takasaki¹⁰, Kouichi Morita², Chang-Kweng Lim¹, and Masayuki Saijo¹

¹Department of Virology I, National Institute of Infectious Diseases, Tokyo; ²Institute of Tropical Medicine, Nagasaki University; ³Nagasaki Prefectural Institute of Environment and Public Health; ⁴Nagasaki Prefecture Tsushima Hospital, Nagasaki; ⁵Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Okayama; ⁶Wakayama Medical University, Wakayama; ⁷Shizuoka Institute of Environment and Hygiene, Shizuoka; ⁸Shimane Prefectural Institute of Public Health and Environmental Science, Shimane; ⁹Yamanashi Institute of Public Health and Environment, Yamanashi; and ¹⁰Kanagawa Prefectural Institute of Public Health, Kanagawa, Japan

Japanese Journal of Infectious Disease, JJID, 2018 Volume 71 Issue 5 Pages 360-364.

Japanese encephalitis (JE) is an acute viral disease caused by the Japanese encephalitis virus (JEV). JEV strains are classified into 5 genotypes (I-V). JEV genotype V strains have never been detected in Japan to date, but they were recently detected in South Korea. In the present analysis, we tried to determine if a JEV genotype V strain caused any JE case in Japan in 2016. Serum and cerebrospinal fluid samples were collected from 10 JE patients reported in Japan in 2016. JEV RNA was not detected in any of the samples. Although JEV is a single-serotype virus, it can be expected that the neutralizing antibody titers against JEV genotype V strains are higher than those against genotype I and III strains in the serum of patients with JE in Japan whose causative JEV was the genotype V strain. The neutralizing antibody titers against the JEV genotype V strain were not higher than those against the genotype I or III strain in any serum samples. Therefore, the evidence that the JEV genotype V strain caused any JE case in Japan in 2016 was absent.