

Import of West Nile virus infection in the Czech Republic

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Abstract. We report West Nile virus infection of the central nervous system in a 69-year-old man, residing in North Moravia (Czech Republic), who visited the USA from 6 July to 31 August 2002. He developed fever with fatigue at the end of his US stay, and was hospitalized in Ostrava after his return on 3 September with fever (up to 39.5 °C), fatigue, anorexia, moderate laryngotracheitis, dizziness, insomnia, blurred speech, and a marked bradypsychism. EEG demonstrated a slow bifrontal theta–delta activity, and CT of the brain a slight hydrocephalus. A

significant increase of antibodies neutralizing West Nile virus was detected between the first (1:16) and second (1:256) blood serum sample. The patient recovered gradually and was released from hospital on 16 September. This is the first recorded human case of West Nile fever (WNF) imported to the Czech Republic. Nine similar cases of WNF import from the USA have already been reported in other European countries – France, Denmark, the Netherlands, and Germany.

Key words: CNS infection, Flavivirus, Import, West Nile virus

A 69-year-old man, residing in the Nový Jičín district, North Moravia (Czech Republic), visited the USA (Chicago, New York, Niagara falls) from 6 July to 31 August 2002. He developed fever (up to 39.5 °C) with fatigue at the end of his US stay, and returned on 2 September to the Czech Republic, where he was hospitalized (Internal Department of the University Hospital in Ostrava-Odry) on 3 September with fever, fatigue, anorexia, moderate laryngotracheitis, dizziness, insomnia, and bradypsychism. Laboratory tests showed a slightly increased ALT (1.15), while other results were normal (AST, urea, creatinine, blood cell counts, hemoglobin, C-reactive protein). After 3 days he was transferred, due to his psychic symptoms, to the Neurology Department at the district hospital in Nový Jičín. There he revealed fever (up to 39 °C), fatigue, anorexia, blurred speech, and a marked bradypsychism. No typical clinical signs of meningitis were observed. Laboratory tests were normal (blood, urine) but the cerebrospinal fluid showed elevated cell count (40/3, predominantly lymphocytes); protein was 0.78 g/l, glucose 2.8 g/l. EEG demonstrated a slow bifrontal theta–delta activity, and CT of the brain a slight internal and external hydrocephalus, senile atrophy, but no specific lesions. The results indicated a viral encephalitis. Serological examinations were negative for Lyme borreliosis and

tick-borne encephalitis, while a significant increase of antibodies neutralizing West Nile virus (plaque-reduction neutralization test, PRNT) [1] was detected between the first (80% PRNT titre 1:16 at 10 days after the disease onset) and second (80% PRNT titre 1:256 at 5 weeks after the disease onset) blood serum sample. The patient, who fulfilled the CDC criteria for a confirmed West Nile fever (WNF) case definition [2], then recovered gradually and was released from hospital on 16 September. He was found healthy during a control examination on 22 November 2002: the results of laboratory tests were all normal (urea, creatinine, ALT, AST, C-reactive protein, RBC sedimentation rate, blood cell counts, hemoglobin).

In conclusion, the patient was diagnosed with a relatively mild form of the West Nile virus infection of the CNS, acquired during his stay in the north-east USA in August 2002. The patient did not mention mosquito bites during his stay in USA. This is the first recorded human case of WNF imported to the Czech Republic. The case was reported to the EPIDAT Czech national epidemiological database (National Institute of Public Health, Prague). Five indigenous cases of WNF (two of them confirmed by seroconversion, three other probable – high titres of neutralizing antibodies in convalescent sera) were described in South Moravia in 1997 [1].

Imported human cases of WNF have lately been recorded in several countries: France 1 case ex Senegal, 1998 [3], 1 case ex USA, 2002 [4], and 4 cases ex Djibouti, East Africa, 2005 [5]; Denmark 2 cases ex USA, 2002 [6]; the Netherlands 3 cases ex USA, 2003 [7]; Germany 3 cases ex USA, 2003 and 2004 [8–9]; Ireland 2 cases ex Portugal, 2004 [10]; Uruguay 1 case ex USA, 2003 [11]; Japan 1 case ex USA, 2005 [12]. However, this list of documented imported WNF cases might only show the tip of the iceberg.

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