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V1 PREVALENCE AND MOLECULAR EPIDEMIOLOGY OF WEST NILE VIRUS INFECTIONS IN CROATIA, 2017

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INTRODUCTION: West Nile virus (WNV) is one of the most widely distributed arthropod-borne virus. In the last decades, WNV infections are detected in many European countries. In Croatia, first clinical cases of WNV neuroinvasive disease was reported in 2012 and thereafter, cases were continuously notified. In addition to human cases, serologic evidence of WNV infection was also recorded in sentinel animals (horses, poultry).

OBJECTIVES: To analyze the prevalence of WNV in humans, horses, poultry and mosquitoes in Croatia in 2017.

MATERIAL: During 2017 transmission season, a total of 90 patients with neuroinvasive infection (meningitis/encephalitis), 172 asymptomatic persons, 560 horses, 1580 poultry and 1186 mosquitoes (*Culex pipiens* and *Aedes albopictus*) were tested for the presence of WNV RNA and/or WNV antibodies. In patients with neuroinvasive infection, cerebrospinal fluid (CSF), serum and urine samples were collected. In asymptomatic subjects and sentinel animals serum samples were collected.

METHODS: WNV IgM/IgG antibodies in human, horse and poultry sera were detected using a commercial ELISA. WNV RNA was detected in human and mosquito samples using real-time and nested RT-PCR. WNV positive human serum samples were confirmed using a virus neutralization test.

RESULTS AND CONCLUSION: Neuroinvasive WNV infection was confirmed in 8 (8.9%) patients by detection of WNV IgM and IgG antibodies of low avidity and/or WNV RNA in CSF and urine. Phylogenetic analysis of four detected strains showed circulation of WNV lineage 2. Four (2.3%) asymptomatic persons were found to be IgG seropositive to WNV. In one participant, recent WNV infection was documented by low IgG avidity. WNV IgG antibodies were detected in 69 (12.3%) sentinel horses and 165 (10.4%) poultry. No one of the tested mosquito pool was found to be WNV RNA positive. Our results confirm the importance of multidisciplinary "One health" approach in the surveillance of this emerging viral zoonosis.