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NEUROINVASIVE ARBOVIRAL INFECTIONS IN CROATIA IN THE "ONE HEALTH" CONTEXT, 2018

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Summary

Tick-borne encephalitis virus (TBEV) and West Nile virus (WNV) are the most common arboviruses detected in Croatia. Sporadic infections caused by Usutu virus (USUV) and Toscana virus (TOSV) were also reported. Antibodies to Tahyna virus (TAHV) and Bhanja virus (BHAV) were found in 1970s and 1980s, but clinical cases were not reported so far. In 2018, a total of 194 patients with neuroinvasive disease were tested for the presence of arboviruses. WNV was the most commonly detected in 54 (27.8%) patients, TBEV in 18 (9.3%), USUV in 3 (1.9%) and TOSV in one (0.5%) patient. TAHV and BHAV were not detected. Infections caused by WNV, TBEV and USUV occurred in continental Croatian regions, while TOSV infection was detected at the Croatian littoral. During the same period, acute asymptomatic WNV infection (IgM antibodies) was documented in 20/2574 (0.8%) tested sentinel horses and 307 (11.9%) were IgG seropositive. In addition, WNV antibodies were detected in 125/1069 (12.7%) poultry serum samples (chickens, turkeys). Acute WNV infections in horses were recorded in March with sporadic occurrence until November. Human WNV infections were notified from July to October. In 2018, a re-occurrence of human USUV infections was reported. Furthermore, WNV and USUV infections in wild birds were detected for the first time in Croatia. USUV was also detected in one pool of the *Culex pipiens* mosquitoes collected in Zagreb. Phylogenetic analysis of detected strains showed circulation of WNV lineage 2 and USUV Europe 2 lineage. Detection of arboviruses in humans, sentinel animals and vectors confirms the importance of multidisciplinary ("One Health") surveillance of emerging arboviral infections.

Keywords: "One Health", neuroinvasive arboviruses, epidemiology, Croatia