



Program and Abstracts

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O4 MONITORING OF WEST NILE INFECTION IN WILD AND DOMESTIC MAMMALS AND BIRDS IN SERBIA: FIRST ISOLATION AND CHARACTERIZATION OF WEST NILE VIRUS (WNV) STRAINS FROM SERBIA

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West Nile virus is a neurovirulent mosquito-transmissible zoonotic virus, which main hosts are birds, but it also infects other vertebrates, including humans, in which it may cause sporadic disease outbreaks that may result fatal. In Europe the virus has been present for decades but, recently, the number, frequency and severity of outbreaks with neurological consequences have increased dramatically, constituting a serious veterinary and public health problem. Until 2004, only lineage 1 strains were circulating in Europe but, since then, lineage 2 strains have been isolated in different countries, becoming locally endemic and showing explosive geographic spread throughout central and south-eastern Europe. WNV circulation was addressed for the first time in Serbia in sera from 279 healthy 3-4 months old backyard pigs collected in 2006-07, and from 333 wild boar and 91 roe deer, as well as from 92 blood sera and 81 pooled tissues from 133 wild resident and migratory birds from 46 species within 28 families, collected during 2011-12 in northern Serbia. WNV antibodies were detected in 15%, 17%, 22% and 7.6% of the pigs, wild boar, deer, and bird sera tested. For the first time in Serbia, WNV RNA was detected by RT-qPCR in pooled tissue samples, and in one serum that resulted infective in cell culture, of nine respective birds. Phylogenetic analysis of partial E region sequences showed the presence of, at least, two lineage 2 Serbian clusters closely related to those responsible for recent human and animal outbreaks in Greece, Hungary and Italy. Full genomic sequence from a goshawk isolate corroborated this data. Experimental infection in mice confirms the high virulence of this isolated lineage 2 strain. These results verify WNV circulation in Serbia and highlight the risk of infection for humans and wild and domestic animals, pointing to the need for implementing WNV surveillance programmes.