

DETECTION OF THE JAPANESE ENCEPHALITIS VIRUS IN WILD BOARS AND COMPARISON OF BLOOD PROFILES BETWEEN WILD BOARS AND DOMESTIC PIGS IN SELANGOR, MALAYSIA

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Abstract

The Japanese encephalitis virus (JEV) RNA was detected in mosquito vectors in Selangor, Malaysia almost two decades ago. However, the JEV status in wild boars, a potential reservoir, has yet to be investigated. Blood profiles can be used for health monitoring however data on the wild boar blood profile is limited. This study was performed to detect the presence of JEV RNA in wild boars in Selangor, Malaysia and to determine the haematological and serum biochemical values of the wild boars. The blood profiles of domestic pigs were also determined for comparison. Thirty-five wild boar tonsils were collected for RNA extraction while 21 wild boar and 40 domestic pig blood were collected for analyses. The RNA extraction was performed using the QIAamp RNA Blood Mini Kit (Qiagen, USA) while reverse transcription and PCR amplification were performed using the i-JEV Detection Kit (iNtron Biotechnology, Korea). The blood analyses were performed using standard protocols in the Haematology and Clinical Biochemistry Laboratory, Faculty of Veterinary Medicine, Universiti Putra Malaysia. The JEV RNA (genotype I and/or III) was detected in one of 21 (4.8%) tonsils; gene sequencing can be done to plot a phylogenetic tree to identify the origin of virus. The positivity may be higher if a vigorously optimized multiplex RT-PCR was used in the detection JEV genotypes. The leucocyte, segmented neutrophil counts and serum globulin concentration of the wild boars were significantly ($p < 0.05$) lower than in domestic pigs and the existing reference data. Serum AST and CK concentration of the wild boars were significantly higher than that of domestic pigs, which might be attributed the physically more active wild boars.

Keywords: JEV RNA, PCR, blood profile, tonsil, wild boar