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Molecular evidence of circulation of *Equine herpes* viruses in Algeria

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Introduction: *Equine herpes* viruses belong to the family Herpesviridae. To date, five herpesviruses have been described as pathogenic and responsible for multiple clinical manifestations in horses: *Equine herpes* virus 1 (EHV1: equine abortion virus), *Equine herpes* virus 3 (EHV3: equine coital exanthema virus) *Equine herpes* virus 4 (EHV4: Equine rhinopneumonia virus), belonging to the subfamily Alphaherpesvirinae, and *Equine herpes* virus 2 (EHV2) and *Equine herpes* virus 5 (EHV5) both belonging to the subfamily Gammaherpesvirinae. The aim of this study is to investigate the potential rule of equine herpesviruses during an episode of acute equine respiratory infection reported in the beginning of 2011 in Tiaret (West province of Algeria).

Materials & Methods: 100 nasal swabs (NS) were collected from horses aged between 1 to 27 years, presenting with cough and mucopurulent nasal discharge) between February and March 2011. These NS were all analyzed for the presence of *Equine herpes* viruses (EHV1, EHV2, EHV4 and EHV5) by quantitative PCR methods (qPCR). Two other equine respiratory viruses, equine influenza virus (EIV) and equine viral arteritis virus (EAV) were also investigated. Each PCR targeted a virus-specific conserved genome: The glycoprotein B coding sequence for EHVs 1, 2, 4 and 5, the matrix protein (M1) for EIV and the nucleoprotein (N) for EAV.

Results: One, or more, of four equine respiratory viruses were detected concomitantly in the nasal swabs of 90 of 100 horses (90%) and the detection rate of *Equine herpes* viruses type 1 (EHV-1), *Equine herpes* virus type 4 (EHV-4), *Equine herpes* virus type 2 (EHV-2) and *Equine herpes* virus type 5 (EHV-5) were 2%, 14%, 90% and 75%, respectively. Equine influenza virus and equine arteritis virus were not detected in any samples. Among the 90 infected horses, 70 were co-infected with EHV-2 and EHV-5 and 14 others were co-infected with EHV-4, EHV-2 and EHV-5. The present study shows a positivity rate of 97.3% for EHV-5 in young horses aged <3 years, a finding which decreased with age. Viral load of EHV-5 was significantly higher in <3 years whereas no effect of age was observed with EHV-2.

Conclusion & Discussion: The present study demonstrates that equine respiratory viruses (EHV-1, -4, -2 and -5), are present in horses in Algeria. This study shows the first detection of equine respiratory viral infection and the first quantification of EHV-2 and EHV-5 genomes in equine respiratory fluids by a qPCR tests within Algeria.

Biography

F Laabassi has been working as a Senior Lecturer at the University of Batna, Algeria.

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