

## Emerging Infections

540

**Avian Bornaviruses (ABV) are widely distributed in canary birds (*Serinus canaria f. domestica*)**

D. Rubbenstroth<sup>1</sup>, M. Rinder<sup>2</sup>, M. Stein<sup>1</sup>, D. Hoepfer<sup>3</sup>, B. Kaspers<sup>4</sup>, K. Brosinski<sup>2</sup>, M. Horie<sup>1</sup>  
R. Korbel<sup>2</sup>, P. Staeheli<sup>1</sup>

<sup>1</sup>University of Freiburg, Institute for Virology, Freiburg, Germany

<sup>2</sup>University of Munich, Clinic for Birds, Reptiles, Amphibians and Ornamental Fish, Munich, Germany

<sup>3</sup>Friedrich-Loeffler-Institute, Institute of Diagnostic Virology, Riems, Germany

<sup>4</sup>University of Munich, Department of Veterinary Sciences, Munich, Germany

Avian Bornaviruses (ABV) were identified in 2008 as the causative agent of proventricular dilatation disease (PDD) in psittacine birds. PDD-like diseases were also reported from other avian species, including canary birds. To date, nine ABV genotypes have been identified which can infect psittacine birds, wild waterfowl and canaries. The aim of this study was to survey the presence of ABV in canary birds and to investigate their pathogenic role. Our results demonstrate a wide distribution of ABV in captive canary birds in Germany. Sequence analysis identified several distinct ABV genotypes, which differ markedly from the genotypes present in psittacines and waterfowl. Some naturally ABV-infected birds expressed PDD-like gastrointestinal and neurological symptoms, while others did not show signs of disease.

Canary birds were experimentally infected with an ABV isolate originating from a canary bird that suffered from PDD. The experimentally infected birds showed seroconversion, viral shedding and a wide tissue distribution of the virus. In addition, ABV was successfully transmitted to sentinel birds kept in the same aviary. Embryonated eggs originating from ABV-infected hens contained ABV-specific RNA, but the virus was not detectable by re-isolation or immunohistochemistry. Interestingly, no clinical signs were observed in the experimentally infected birds until the end of the experiment at five months post infection.

Our results show that ABV expresses a remarkable genetic diversity and that different genotypes may be present in a broad range of different avian species. ABV is widely distributed in canary birds and thus should be considered as a potential pathogen of this and possibly additional passerine species.

Corresponding author:

**Dennis Rubbenstroth**

dennis.rubbenstroth@uniklinik-freiburg.de