

Prevalence of *Chlamydophila psittaci* in wild birds - potential risk for domestic poultry, pet birds and public health?

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Key words

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Aim of the study

Ornithosis/psittacosis is caused by *Chlamydophila (C.) psittaci* and occurs worldwide in 467 different bird species. In Switzerland, about five to ten cases of ornithosis in captive birds are reported annually. To date, little is known about the prevalence of *C. psittaci* in the wild bird population. This lack of knowledge led us to investigate the prevalence of *C. psittaci* in the Swiss wild bird population and to evaluate the potential risk for transmission of ornithosis to domestic poultry, pet birds and humans.

Material and methods

We investigated cloacal swabs from 527 songbirds and 442 waterfowl (originating from the avian influenza surveillance in 2005/06), 84 feral pigeons (60 from Lucerne, 24 from Zurich) and 38 cormorants (hunting season 2007/08, Dachsen ZH) by *Chlamydiaceae*-specific real-time PCR. In addition, inner organs (liver, lung, kidney, spleen and heart) from 60 pigeons and 38 cormorants were examined by real-time PCR. Positive cases were investigated by the ArrayTube (AT) microarray method for chlamydial species determination, followed by genotyping of the *C. psittaci* positive cases. Inconclusive cases were further examined by PCR methods targeting different chlamydial genes (23S, 16S, intergenic spacer, ompA).

Results and significance

Cloacal swabs of 19 water birds (tufted ducks and pochards), twelve pigeons and one songbird were tested positive by the *Chlamydiaceae*-specific real-time PCR. *C. psittaci* genotype B (n=5) and genotype E (n=1) was determined in cloacal swabs (n=9) of feral pigeons, the genotype could not be identified in the remaining three cases. *Chlamydiaceae*-positive cases (n=23; 19 waterfowl, three pigeons, one songbird) were further examined by 16S rRNA PCR as chlamydial species could not be determined by AT microarray, revealing 90-92% homology to *Chlamydia suis* (n=20) and 95-100% homology to *C. psittaci* (n=3). Cloacal swabs from the 38 cormorants as well as inner organs from pigeons (n=60) and cormorants (n=38) were negative.

In conclusion, *C. psittaci* was not detected in waterfowl and songbirds, indicating low risk for transmission of *C. psittaci* to humans, poultry and other captive birds. In contrast, feral pigeons pose a significant risk for humans, in particular if close contact is occurring in cities.

Publications, posters and presentations

Zweifel D, Hoop R, Sachse K, Pospischil A, Borel N (2007) Prevalence of *Chlamydophila psittaci* in wild birds- potential risk for domestic poultry, pet birds and public health? International Meeting for Young Pathologists, Asti, Italy, 26th-28th of June, 2008 (presentation).

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