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Molecular survey of *Influenza A virus* transmission in a wild bird – backyard poultry interface in Mexico

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The dynamics of *Influenza A virus* infection is determined generally by features of the virus, ecological factors, and anthropogenic influences. Avian influenza interspecies transmission is facilitated in areas where migratory birds and poultry have direct or indirect contact. This study aims to identify the circulation of avian influenza viruses in migratory waterfowl and in domestic poultry that coexist in a wildlife/domestic animal interface, characterized by no animal health surveillance. The study was performed in a Protected Natural Area of Mexico located within the Pacific Flyway. Regulated duck hunting activities are developed there each winter season. Surrounding this region, there are several backyard poultry systems with low biosecurity measures and unregulated trade of domestic animals. Real-Time RT-PCR assays were performed to 598 cloacal swab samples corresponding to ten wild duck species, and 103 oral and cloacal swab samples from five domestic avian species. Twenty-two samples were positive to influenza A virus, three of these corresponding to migratory ducks: *Anas crecca, Anas discors, Anas clypeata,* and one to a resident duck, *Anas platyrhynchos diazi,* a species not reported before as positive to avian influenza virus. All domestic bird samples were negative. There was no evidence of interspecies transmission according to the molecular diagnosis. This is the first research effort of avian influenza virus in México, focused on the wildlife-poultry interface, needed to better understand the disease epidemiology.

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