

First evidence of avian metapneumovirus subtype A infection in turkeys in Egypt

Abstract

Although avian metapneumovirus (aMPV) infection has been reported in most regions of the world, to date, only subtype B has been detected in Egypt. At the end of November 2013, dry oropharyngeal swabs were collected during an outbreak of respiratory diseases in a free-range, multi-age turkey dealer farm in Northern Upper Egypt. The clinical signs that appeared when turkeys were 3 weeks-old were characterized by ocular and nasal discharge and swelling of sinuses. aMPV of subtype A was detected by real-time reverse transcription-polymerase chain reaction. In order to confirm the results and obtain more information on the molecular characteristics of the virus, F and G protein genes were partially sequenced and compared with previously published sequences deposited in GenBank by using BLAST. Subtype of the strain was confirmed by sequencing of partial F and G protein genes. The highest percentages of identity were observed when G sequence of the Egyptian strain was compared with the sequence of an aMPV A isolated in Nigeria (96.4 %) and when the F sequence was compared with strains isolated respectively in Italy and in UK (97.1 %). Moreover, the alignment of the sequences with commercial subtype A vaccine or vaccine-derived strains showed differences in the Egyptian strain that indicate its probable field origin. The detection of aMPV in the investigated turkey flock highlights some relevant epidemiological issues regarding the role that multi-age farms and dealers may play in perpetuating aMPV infection within and among farms. To our knowledge, this is the first report of aMPV subtype A in Egypt.

Keywords: Turkeys, Avian metapneumovirus subtype A, Egypt, Phylogenetic analysis

Abbreviations

aMPV Avian Metapneumovirus
AIV Avian influenza virus
BIC Bayesian information criterion
NDV Newcastle diseases virus
RRT- Real-time reverse transcription-polymerase
PCR chain reaction