بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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Molecular and Pathological Investigations on Vaccinal and Field Strains of Infectious Laryngotracheitis Virus (ILTV) in Egypt

A thesis submitted by

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For The degree of the Ph.D

Pathology (General, Special and Postmortem)

Under supervision of

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2021

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Abstract

Infectious laryngotracheitis (ILT) is a severe respiratory disease, which causes high morbidity and mortality in affected birds. A total of 166 birds from nine governorates were sampled and examined over two years (2018–2020). Alterations in larynx, trachea, lung, and air sac tissues were evaluated by histopathology. Tracheal lesion score showed that 6.02%, 26.5%, 43.3% of the birds exhibited mild, moderate, and severe changes, respectively, while 24.18% of the birds exhibited very severe changes. Furthermore, severe cases were related to the Qalyubia governorates. Moreover, immunohistochemistry was used to detect viral particles. Transmission electron microscopy enabled the detection of virus particles and demonstrated that heterophils could be infected and transfer the virus to non-respiratory tissues causing viremia. PCR targeting a portion of the thymidine kinase gene was further utilized to confirm the presence of ILTV DNA. The complete coding sequences of three envelope glycoprotein genes, gG, gD, and gJ, and a partial sequence of the infected cell polypeptide 4 (ICP4) gene from samples representing all of the farms and disease outbreaks were determined. Five prototype strains with unique sequences were chosen for detailed molecular characterization. Sequence comparisons and phylogenetic analysis of the partial ICP4 gene revealed that two strains were chicken embryo origin (CEO)-vaccine-like strains, and three were tissue culture origin (TCO)-vaccine-like strains. Pathogenicity study were conducted to detect the increased severity of lesions, compare between both strains circulating in Egypt and determine protection level of different commercial vaccines against both strains. The recombinant strain was more pathogenic and severe than CEO-like strain. Develop new protocols to enhance flock immunity and enhance disease control need to be considered.

Keywords: ILTV, Histopathology, Immunohistochemistry, Electron microscopy, PCR, Recombinant stain, CEO-like strain, Egypt

Dedication

To my dear Parents,

To my brother and Sister,

To my Future Wife Mawada

And To my friends

Thanks a lot…

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