Cairo University
Faculty of Veterinary Medicine
Department of Poultry Diseases

Studies on genotype VII of Newcastle disease virus infection in chickens

Thesis Presented By

Hager Magdy Ahmed El-Sayed
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Under Supervision of

Prof. Dr. Mohamed Mahrous Amer

Professor of Poultry Diseases
Faculty of Veterinary Medicine
Cairo University

Prof.Dr. Mohamed Abd El Aziz Kutkat

Professor of Poultry Disease
Veterinary Research Division
National Research Center

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Cairo University
Faculty of veterinary medicine
Department of Poultry Diseases

Supervision Sheet

Prof. Dr. Mohamed Mahrous Amer

Professor of poultry Disease
Faculty of Veterinary Medicine
Cairo University

Prof. Dr. Mohamed Abd El Aziz Kutkat

Professor of poultry Disease
Veterinary Reasearch Devision
National Research Center

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Department of Poultry Diseases

Name: Hager Magdy Ahmed El Sayed
Date of birth: 26/12/1989
Degree: Master degree of veterinary science
Nationality: Egyptian
Specialization: Poultry diseases
Title of thesis: Studies On Genotype VII of Newcastle disease virus infection in Chickens

Abstract

Seventy nine chicken flocks were investigated for the presence of NDV using RT-PCR F-protein gene assay using degenerate primers specific for velogenic strains of NDV, 23 flocks tested positive for vNDV. Four representative isolates were sent for partial sequencing of the F-Protein gene. Results revealed that all isolates have multiple basic A.A at the F-Protein cleavage site possessing the velogenic motif (^{112}.**RRQKR*F**.^{117}). Phylogenetic analysis of the F-protein 375 b.p. hyper variable region (nt 47–422), revealed that all isolates are belonging to genotype VIId with (98%-99%) amino acid identity matrix with the Israelian2 **(Turkey-Israel-111-2011)** and Chinese2 **(Chicken-China-SDYT03-2011)** strain**,** Genotype VIId. Single pure NDV isolated strain was selected (**NDV/chicken/EG-QU/NRC/2015, acc .No. MF418018)** after testing negative for AI (H5, H9), IB virus. Titration of the selected strain reveals MDT of (36 hr.) and $10^{7.7}$ EID_{50}/ 0.1 ml. In vivo vaccination protection study was done using different vaccination programs for protection against challenge with the locally isolated (**NDV/chicken/EG-QU/NRC/2015, acc.No. MF418018)**.Commercial broiler chicks were divided in to 7 different vaccination groups including positive non-vaccinated control group. Results revealed that group vaccinated with La Sota with inactivated NDV vaccine showed 100% protection rate against mortality and emergency vaccination after challenge using La Sota vaccine gave the best result. Cloacal viral shedding was decreased in vaccinated groups with La Sota and Avinew but not completely prevented. Group no.1 and 4 were showing a high mean HI titer than other groups and least viral shedding following infection, while group's no. 3 and 6 are showing a lower mean HI titer and protection rate than other groups. Possible causes of these results were discussed in details.

Key words: Egypt, velogenic NDV, Genotype VIId, vaccination programs, protection study, Shedding.

DEDICATION

This work is dedicated to
My father
My mother
A special dedication is presented to my husband, who patient with me.
My beloved daughters Mariam &Krma
My brothers

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