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Studies on genotype VII of Newcastle disease virus infection in chickens

Thesis Presented By

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(B.V.Sc., Cairo University, 2011)

For the Master Degree of Veterinary Sciences

(Poultry Diseases)

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2017



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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 VIIId with (98%-99%) amino acid identity matrix with the Israelian2 (**Turkey-Israel-111-2011**) and Chinese2 (**Chicken-China-SDYT03-2011**) strain, Genotype VIIId. 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 $10^{7.7}$ EID₅₀/ 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 VIIId, 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*

ACKNOWLEDGMENT

*First of all, prayerful thanks for our merciful **ALLAH**, for everything I had and supplied me with the power not only to carry out this work but also during my whole life. My endless prayers and thanks to the greatest person allover all eras; our prophet Mohammed who has been sent to us by the most important gift in our life that is our Islam.*

*I wish to express my sincere gratitude to **Prof.Dr. Mohamed Mahrous Amer** , Professor of poultry Diseases, Faculty of Veterinary Medicine, Cairo University, for his wise planning, stimulating supervision, guidance, constructive criticism and valuable advices during supervising this work,*

*My grateful appreciation and thanks to **Prof.Dr. Mohamed Abd El Aziz Kutkat**, Professor of poultry Diseases, Veterinary Research Devision, National Research Center, for his sincere supervision, offering materials and instruments, keen guidance, thesis editing, plan and endless support, throughout the whole work,*

*I wish to express my sincere gratitude to **Prof.Dr.Khaled Mohamed ELbayoumi**, Professor of poultry Diseases, Veterinary Research Division, National Research Center, for his supervision and help in this work,*

*I wish to express my sincere gratitude to **Dr.Mohamed Bosila**, Researcher in poultry diseases department, Veterinary Research Division, National Research Center, for his effort in the histopathological examination studies in this work,*

*My grateful appreciation and thanks to **Dr.Sameh Ahmed Amer**, Assistant Researcher in poultry diseases department, Veterinary Research Division, National Research Center, for his effort and help in this work,*

I owe a lot to my parents who encouraged and helped me at every stage of my life, and longed to see this achievement come true.

*It's my fortune to gratefully acknowledge the support of a special individual. Words fail to express my appreciation to my husband **Mr.Mohamed Mostafa Arafa**, the lawyer in High Appeal and the State Council for his generous care and the homely feeling. I am indebted for his support, encouragement and patience through my research. He was always beside me during the hard moments to push and motivate me. I can never pay him back for all the help he has provided me.*

It is of great pleasure for me to express my thanks and gratitude to anyone offered me a help to during that work,

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