

Cairo University
Faculty of Veterinary Medicine

Name : Ali Zaher Baker Qandoos
Date of birth : 24-2-1992
Nationality : Palestinian
Degree : M. V. Sc.
Specification : Poultry Diseases
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Supervisions:

Prof. Dr. Wafaa Abd El-Ghany Abd El-Ghany

Prof. Dr. Hanan Ali Ahmed

Abstract

In this study, *P. multocida* the causative agent of FC was isolated from chicken layers and breeders. The isolation trials revealed 6 *P. multocida* positive cases with incidence rate of 10.9%. The suspected *P. multocida* isolates were identified morphologically and biochemically. Serotyping of the isolated strains revealed that the isolates were related to serotype A:1 and A:3. The isolates were tested genetically using PCR of universal and capsular specific primers of *P. multocida*, and the molecular testing revealed their relatedness to *P. multocida* capsular type A. Inactivated *P. multocida* vaccine consisted of serotype 1 and 3 was prepared and its efficacy in chickens was determined. ELISA test showed an increase in antibody titer after twice vaccination, the highest level was at 5 weeks after vaccination. The FC vaccine conferred 85% and 80% protection after challenge with *P. multocida* serotype A:1 and A:3, respectively, while the protection rate was 10% and 20% in non vaccinated challenged groups with *P. multocida* serotype A:1 and A:3, respectively. The mortality rate, clinicopathological findings, re-isolation of the organism and histopathological examination of organs from all groups was recorded. Antibiogram of isolated strains revealed that the strains were in vitro sensitive to several antibiotics as chloramphenicol, tetracycline, trimethoprim /sulphamethoxazole, ofloxacin, penicillin G, norfloxacin, azithromycin, and erythromycin and resistant to ampicillin and clindamycin.

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LIST OF CONTENTS

Content	Page
1. INTRODUCTION	1
2. REVIEW OF LITERATURE	3
2.1. Incidence of <i>P. multocida</i> infection in the world	3
2.2. Incidence of <i>P. multocida</i> infection in Egypt	7
2.3. Susceptibility to <i>P. multocida</i>	9
2.4. Clinical signs and post-mortem lesions	10
2.4.1. Clinical signs	10
2.4.2. post-mortem lesions	11
2.5. Histopathological examination	13
2.6. Isolation and identification of <i>P. multocida</i>	15
2.6.1. Isolation of <i>P. multocida</i>	15
2.6.2. Identification of <i>P. multocida</i>	17
2.6.2.1. Cultural and morphological identification	17
2.6.2.2. Biochemical reactions	19
2.6.2.3. Mouse assay	21
2.6.2.4. Serotyping	23
2.6.2.5. Molecular identification using polymerase chain reaction (PCR)	26
2.7. Vaccination against <i>P. multocida</i>	28
2.8. Enzyme-linked immunosorbent assay (ELISA)	33
2.9. Antibigram	34
3. MATERIALS AND METHODS	37
3.1. MATERIALS	37
3.1.1. Samples (chickens)	
3.1.2. Bacteriological media	
3.1.3. Reagents and solutions used for biochemical identification	
3.1.4. Stains	
3.1.5. <i>P. multocida</i> specific antisera	37
3.1.6. Materials used for serological identification of <i>P. multocida</i>	-
3.1.7. Materials used for molecular identification of <i>P. multocida</i> isolates using cPCR	50
3.1.8. Materials used for preparation of inactivated <i>P. multocida</i> vaccine	
3.1.9. Experimental animals and birds	
3.1.10. Bacterial strains used for challenge	
3.1.11. Materials used for histopathological examination	
3.1.12. Materials and equipments used for ELISA test	

3.1.13. Materials used for antibiogram	
3.2. METHODS	51
3.2.1. Isolation and morphological identification of <i>P. multocida</i>	
3.2.2. Biochemical identification of suspected <i>P. multocida</i> isolates	
3.2.3. Serological identification of <i>P. multocida</i> isolates	
3.2.4. Molecular identification of <i>P. multocida</i> isolates by cPCR	51
3.2.5. Mice inoculation	-
3.2.6. Preparation of inactivated vaccine from the predominant <i>P. multocida</i> local strains	
3.2.7. Quality control tests of the locally prepared inactivated <i>P. multocida</i> vaccine	62
3.2.8. Experimental design	
3.2.9. Parameters used for evaluation of locally prepared inactivated <i>P. multocida</i> vaccine in chickens	
3.2.10. Antibiogram	
4. RESULTS	63
5. DISCUSSION	93
6. SUMMARY	106
7. REFERENCES	109
8. ARABIC SUMMARY	1

LIST OF TABLES

Table	Title	Page
1	Total number of examined flocks distributed in different Egyptian governorates	38
2	History of the suspected flocks of El-Sharqia governorate	38
3	History of the suspected flocks of El-Gharbia governorate	39
4	History of the suspected flocks of El-Qalubia governorate	39
5	History of the suspected flocks of El-Minofia governorate	40
6	Oligonucleotide primers sequences	45
7	Preparation of uniplex PCR Master Mix	56
8	Cycling conditions of the different primers during cPCR	57
9	The experimental design of vaccinated and challenged groups with <i>P. multocida</i>	60
10	The total incidence rates of <i>P. multocida</i> in examined layers and breeders chicken flocks	66
11	Incidence rates of <i>P. multocida</i> in different examined flocks in El-Sharqia governorate	67
12	Incidence rates of <i>P. multocida</i> in different examined flocks in El-Minofia governorate	67
13	Incidence rates of <i>P. multocida</i> in different examined flocks in El-Qalubia governorate	67
14	Incidence rates of <i>P. multocida</i> in different examined flocks in El-Gharbia governorate	68
15	Biochemical characteristics of suspected <i>P. multocida</i> isolates	70
16	Mean ELISA antibody titres of sera in chicken groups pre-vaccination; one, two and three weeks after primary vaccination; one and two weeks after secondary vaccination and one and two weeks after challenge	74
17	Results of protection rates in different chicken groups	76
18	Results of reisolation of <i>P. multocida</i> among chicken groups after challenge	78
19	Results of Antibiogram test of <i>P. multocida</i> strains against different 13 antimicrobial agents	90

LIST OF FIGURES AND PLATES

Figure	Title	Page
1	Congestion and cyanosis of comb and wattles	63
2	Septicaemia with congested comb and wattles	64
3	Multiple point necrotic foci and hemorrhages on liver surface	64
4	Congested and enlarged spleen	65
5	Fibrinous exudates on the heart and liver surfaces	65
6	Incidence of <i>P. multocida</i> in relation to governorates	68
7 and 8	Small mucoid and grayish dew drop like colonies on DAS medium (left) and brain heart infusion agar medium (right)	69
9	Agarose gel electrophoresis showed that the two isolates had the amplified product 460 bp of kmt1 gene of <i>Pasteurella spp.</i>	71
10	Gel electrophoresis of the isolated <i>P. multocida</i> revealed that the isolates gave bands at 1044 bp and ladder from 100-1500 which are characteristic to <i>P. multocida</i> serogroup (A)	72
11	Mean ELISA antibody titers of sera in chicken groups pre-vaccination; one, two and three weeks after primary vaccination; one and two weeks after secondary vaccination and one and two weeks after challenge	75
12	Results of protection rates in different chicken groups	77
13	Results re-isolation of <i>P. multocida</i> among chicken groups after challenge	78
14	Liver of chickens vaccinated with locally prepared inactivated <i>P. multocida</i> vaccine and challenged with <i>P. multocida</i> serotype A:1 showing mild congestion of the central vein (arrow). (H&E), (X 200)	79
15	Normal liver of control birds (non vaccinated non infected chickens). (H&E), (X 200).	88
16	Normal heart of control birds (non vaccinated non infected chickens). (H&E), (X 200)	88
17	Normal spleen of control birds (non vaccinated non infected chickens). (H&E), (X 200)	89
18	Results of AntibioGram test of <i>P. multocida</i> serotype A:1	91
19	Results of AntibioGram test of <i>P. multocida</i> A:3	92

Plate	Title	
1	Heart of chickens vaccinated with locally prepared inactivated <i>P. multocida</i> vaccine and challenged with <i>P. multocida</i> serotype A:1	80
2	Spleen of chickens vaccinated with locally prepared inactivated <i>P. multocida</i> vaccine and challenged with <i>P. multocida</i> serotype A:1	80
3	Liver of chickens vaccinated with locally prepared inactivated <i>P. multocida</i> vaccine and challenged with <i>P. multocida</i> serotype A:3	81
4	Heart of chickens vaccinated with locally prepared inactivated <i>P. multocida</i> vaccine and challenged with <i>P. multocida</i> serotype A:3	82
5	Spleen of chickens vaccinated with locally prepared inactivated <i>P. multocida</i> vaccine and challenged with <i>P. multocida</i> serotype A:3	83
6	Liver of experimentally infected birds with <i>P. multocida</i> A:1 strain	84
7	Heart of experimentally infected birds with <i>P. multocida</i> A:1 strain	84
8	Spleen of experimentally infected birds with <i>P. multocida</i> A:1 strain	85
9	Liver of experimentally infected birds with <i>P. multocida</i> A:3 strain	86
10	Heart of experimentally infected birds with <i>P. multocida</i> A:3 strain	86
11	Spleen of experimentally infected birds with <i>P. multocida</i> A:3 strain	87

LIST OF ABBREVIATIONS

Bp	Base pair
CAP	Capsular
CFU	Colony forming unit
cPCR	Conventional polymerase chain reaction
CU	Clemson University
DPV	Day post vaccination
DSA	Dextrose starch agar
ELISA	Enzyme-linked immunosorbent assay
ERIC-PCR	Enterobacterial repetitive intergenic consensus
FC	Fowl cholera
FTM	Fluid thioglycollatemia
FTMB	Fluid thioglycollatebeef extract
HAI	Haemagglutination inhibition
H&E	Hematoxylin and eosin
HS	Heat stable
IHA	Indirect haemagglutination
I/M	Intramuscular
I/P	Intra-peritoneal
I/T	Intratracheal
KSCN	Potassium thiocyanate
LPS-P	Lipopolysaccharide-protein complex
MA	Microtiter agglutination
NO	Number
OMPs	Outer membrane proteins
PCR	Polymerase chain reaction
PM-PCR	<i>Pasteurella multocida</i> Polymerase chain reaction
PFGE	Pulsed field gel electrophoresis
PHA	Passive haemagglutination
PI	Post inoculation
<i>P. multocida</i>	<i>Pasteurellamultocida</i>
rcp	Recombinant adhesive protein
REP-PCR	Repetitive extragenic palindromic PCR
RFHAB2	Recombinant filamentous hemagglutinin
rOmpH	Recombinant outer membrane protein H
S/C	Subcutaneous
SCDM	Soybean casein digest media
TB	Trypticase broth
TBE	Tris borate EDTA
+	Positive
-	Negative

