قسم أمراض الدواجن
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دور الطيور والعليقة في نقل بعض أمراض الدواجن

١ - الميكوبلازما والانتيروباكتيرياسي

عادل سليمان ، صلاح موسى ، عبداللطيف بيومي *، ناهد جاد ، محمد عطية**

تم عزل مبكروبات الميكوبلازما وميكروبات مجموعة الانتيروباكتيرياسي من ٢١٣ طائر حي ، ٨٧ طائر ميت يمثلون ستة أنواع من الطيور الطليقة والمهاجرة تم اصطيادها من محافظة أسيوط وكانت هذه الطيور هي العصافير ، اليمام ، أبوفصادة ، البوم ، الهدهد وبعض الطيور المائية • وبالتصنيف السيرولوجي لعترات الميكوبلازما ثبت أنها م•جاليسبتكم ، م• جالينيرم ، م• كولمبينم ، أ• ليدلاوي وبعض العترات والتي لم يمكن تصنيفها • وبعمل الاختبارات البيوكيميائية والسيرولوجية أمكن تصنيف ميكروبات مجموعة الانتيروباكتيرياسي الى الميكروب القولوني ، والسالمونيلا ، الكلبسيلا ، ولبروتيس ، الانتيروباكستر بالاضافة الى بعض الميكروبات التي لم يمكن تصنيفها •

ويمكن القول بأن الطيور الطليقة والمهاجرة تلعب دورا ميكينيكيار بيولوجيا في نقل هذه الميكروبات لمزارع الدواجن •

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THE ROLE PLAYED BY FREE FLYING BIRDS IN THE TRANSMISSION OF AVIAN PATHOGENS II. MYCOPLASMA AND ENTEROBACTERIACAE

(With 3 Tables)

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SUMMARY

Mycoplasmas and Entrobacteraceae could be isolated and identified from 213 living and 87 dead free flying birds and migratory fowls captured from Assiut Governorate. According to the growth precipitation, growth inhibition, and immuno-fluresence tests, M. gallisepticum, M. gallinarum, M. columbinum, A. laidlawii and untyped Mycoplasmas could be identified. On the basis of biochemical and serological tests, E.coli, Salmonella sp., Klebsiella, Proteus, Entrobacter, and unidentified types could be isolated. It could be concluded that free flying birds play a mechanical and biological role in transmission of Mycoplasmas and Entrobacteraceae to poultry farms.

INTRODUCTION

Free flying birds play a mechanical and biological role in transmission of mycoplasma to poultry farms. (KLEVEN and FLETCHER, 1983; STALLKNECHT, et al. 1982).

BOZEMAN. et al. 1983 isolated mycoplasma and other bacteria from yellow-naped Amazon parrot.

Mycoplasma was isolated from wild type turkey living in close contact to domestic turkeys. JESSUP. et al. 1983, from throat of three apparently healthy PUMAS; HILL, 1986, from racing pigeons, REECE, et al. 1986 a, and also was isolated from Japanese Quail, partridges and golden phesants, REECE, et al. 1986 b.

EL TAHER, et al. 1986 recovered Mycoplasma galliseticum and Mycoplasma gallinarum from tree Sparrows in Sharkia province.

Various species of entrobacteriacae organisms were isolated from Quails and other Psittacine birds, (ARNALL, 1969; GRANAN. D.L. 1978; PHILLIPS and HATKIN, 1970; GLUNDER, 1981; SAH. et al. 1983 and MORESTEIN. et al. 1985).

This work was designated to describe the role of some free flying birds in transmission of mycoplasmas and Entrobacteraceae to poultry farms in upper Egypt.

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MATERIAL and METHODS

Free flying birds:

213 living free flying birds and 87 dead birds representing six species, (Passer domesticus, Turtur sengalensis, Strix flamea, Upupa epops, Motacilla flava) and migratory water fowls, (Anas C. crecca,Gallinula choropus, Fulica arta arta), were captured from different localities in Assiut Governorate.

Isolation and characterization of Mycoplasmas:

Swabs from cloaca, trachea, lung and air sacs were collected on brain-heart infusion broth, then subcultured on brain heart infusion agar, SABRY, 1968. Agar plates were incubated under low oxygen tension and humidity. Plates were examined microscopically for the presence of the common fried egg colonies. The suspected colonies were subjected to bacterial irreversability, purification, biochemical identification as described by, FREUNDT, et al. 1979. Serological identification of isolates was achieved by using the Growth inhibition test, CLYDE, 1964, Growth precipitation test, KROGSGARD-JENSEN, 1972 and indirect-immune-fluresence antibody test after AL-AUBAIDI, et al. 1971.

Isolation and identification of Enterobacteriacae:

Direct cultures were made from liver, intestine and rectum on enrichment media, (Nutrient, Selenite F-broth and tetrathionate broth) as well as on selective media (S.S. MacConkey, Brilliant green agar), CRUICKSHANK, et al. 1973. Enriched and selective media were incubated aerobically and micro-aerobically for 18-24 hrs. at 37°C. Then supjected to further identification according to colony and bacterial morphology and biochemical tests, COWAN, 1974; CRUICKSHANK, et al. 1975 and EDWARDS and EWING, 1972).

RESULTS

Sixty-five Mycoplasma isolates were recovered from examined cloacal, tracheal, lung and air-sac swabs, table 1.

Biogrouping of recovered isolates revealed that 46 isolates were glucose positive and arginine negative, 12 isolates glucose negative and arginine positive, and 7 isolates were gluocose positive and arginine positive.

The results of groth-precipitation GP, growth inhibition GI and immuno-flurscence IF tests typed the isolates as 28 Mycoplasma gallisepticum, 10 Mycoplasma gallinarum, 13 Mycoplasma columbinum, 2 acheloplasma laidlawii and 12 isolates were untypable, table II.

Table 1 showed that examined samples of the free flying birds revealed the recovery of 162 isolates suspected to be members of enterobacteriacae group.

Further biochemical and serological characterization grouped the isolates as 81 Echerachia coli, 50 Salmonella species, 6 klebsiella, 17 Proteus, 2 Entrobacter, and 6 isolates were unidentified, table III.

DISCUSSION

Our results showed that examined free flying birds are susceptible to infection with Mycoplasmas, this is in agreement with reports of Mycoplasma isolation, (JAIN, et al. 1971; SHIMIZLL, et al. 1979; KLEVEN and FLETCHER, 1983; BOZEMAN, et al. 1983 and EL-TAHER, et al. 1986.

The frequency of isolation was low with what would be expected in chickens and turkeys. Infection was not accompanied with visible gross lesions suggesting that most of free flying birds are resistante to Mycoplasma infection, KLEVEN and FLETCHER, 1983.

Isolation of Mycoplasma gallisepticum, Mycoplasma gallinarum, Mycoplasma columbinum and Acheloplasma laidlawii which were proved to be pathogenic for chickens, turkeys and pigeons points out the danger of these free flying birds when coming in contact with poultry farms. YODER, 1984.

Recovery of 162 isolates of entrobacteriacae refers to the susceptibility of these birds to such enteric bacteria. This group of organisms were considered as infectious agents under unvariable conditions attributable to stress factors, GLUNDER, 1981.

Our results revealed the isolation of 50 isolates of Salmonella, in agreement with results of PHILLIPS and HATKIN, 1978, who succeeded in isolation of Salmonella from Cockateil.

Proteus. Entrobacter. Echerachia coli. and Klebsiella organisms were also isolated from examined cases. Similar results were obtained by GLUNDER, 1981 and SAH, et al. 1983.

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Table (I)
Results of recovery of Mycoplasma and Entrobacteriacae

Species of the Free living birds	No. of Examined Samples			Mycoplasma Isolates				Enterobacteriacae Isolates			
	Dead	Living	Total	Cloaca	Trachea	Lung	Air-sac	Cloaca	Intestine	Liver	Bucal Cavity
Passer domesticus	-	120	120	12	8	4	7	21	8	4	10
Turtur senegalensis	10	60	70	9	3	1	2	12	5	2	7
Strix flammea	-	5	5	1	1	-	-	3	2	1	3
upupa epops	11	6	17	4	2	-	1	8	4	2	3
Motacilla flava	11	12	23	5	3	1	1	7	3	3	4
Anas C.crecca	25	-	25	-	-	-	-	12	6	1	4
Gallinula choropus	15	-	15	-	-	-	-	7	3	2	3
Fulica arta arta	15	-	15	-	-	-	-	6	2	2	2

Table (II)
Results of biochemical and serological identification of Mycoplasma isolates

Species of the Free living birds	No. of Exam. Isolates	Biochemical Reactions			Mycoplasma			Achelop laid.	U typ M.
		Glucose+ Arginin-	Glucose- Argenin+	Glucose+ Argenin+	M. galli sept	M. galli narum	M. col- um.		
Passer domesticus	31	23	4	4	11	4	7	2	7
Turtur senegalensis	15	11	3	1	8	2	3	-	2
Strix flammea	2	2	-	-	2	-	-	-	-
Upupa epops	7	4	2	1	3	2	1	-	1
M. tacilia falava	10	6	3	1	4	2	2	-	2

Table (III)
Results of differentiation of Entrobacteriacae isolates

Species of the Free living birds	No. of Exam. Isolates	Enterobacteriacae Isolates					
		E.coli	Salmonella sp.	Klebsiella	Proteus	Enterobacter	Others
Passer domesticus	43	23	10	2	4	1	3
Turtur senegalensis	26	13	7	1	3	-	2
Strix flammea	9	3	4	-	2	-	-
Upupa epops	17	8	5	1	2	-	1
Motacilla falava	17	9	6	-	1	1	-
Anas C.crecca	23	11	9	1	2	-	-
Gallinula chloropus	19	8	5	1	1	-	-
Fulica arta arta	12	6	4	-	2	-	-