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بعض الدراسات على الأجهزة فى الأبقار فى الوادى الجديد

أحمد عبد الرحيم ، مراد اسماعيل ، أحمد زغلول

تم فى هذا البحث دراسة حالات الأجهزة (١٩ حالة) التى حدثت فى
الوادى الجديد عام ١٩٨٤ م . والتى أدت الى نفوق ١١ بقرة منها .

وقد تم عزل السالمونيلا " تيفيموريوم " والسالمونيلا " دبلن " من العجول المجهضة
وكذلك تم عمل اختبار الحساسية واتضح أن الكاناميسن أكثر الأدوية تأثيرا على
الميكروب .

وقد تم حقن الحيوانات بالكاناميسين مما أدى الى السيطرة على المرض .

بسم الله الرحمن الرحيم
الحمد لله رب العالمين
والصلاة والسلام على سيدنا محمد وآله

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SOME STUDIES ON ABORTION OF CATTLE IN THE NEW VALLEY (With 2 Tables)

By
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SUMMARY

An outbreak of abortion occurred among a herd of 79 Friesian cows recently introduced to the New Valley Governorate led to 19 cases of abortions from which eleven were died.

Salmonella typhimurium and salmonella dublin were recovered from the stomach content, liver and lungs of the aborted calves.

In vitro, kanamycin was the most effective drug. Field trials showed the efficiency of kamamycin and sanitary precautions for controlling the disease in the farm.

INTRODUCTION

Salmonellosis is one of the most dangerous diseases of animals and man (REFAI and SADEK, 1968). An increased incidence of clinical salmonellosis has been observed probably not only due to imported meat and bone meal, but also due to the appearance of many strains with a remarkable resistance to antibiotics and sulphonamides (POHL, *et al.* 1979).

Salmonella dublin and salmonella typhimurium were the commonest sero types connected with sporadic abortion in cattle (FIELD, 1959; DENNIS, 1969; HUBBERT, *et al.* 1973; DEAS, 1981 and VANDEPLASSCHE, 1982). POHL, *et al.* (1979) stated that in acute septicaemic form of salmonellosis, the micro-organism is attracted especially to the pregnant uterus and the foetus. The endotoxins produced during uterine infection make a complex of factors responsible for some abortions. Severe post-partum metritis can be fatal for some of aborting cows.

The aim of this work was to study the cause of abortion in a recently imported Friesian cattle in the New Valley company farm. Application of invitro sensitivity test to the isolated micro-organism using different antibiotics was performed. The most effective drug was tried in the field to control the disease among the affected animals.

MATERIAL and METHODS

The clinical history of the herd:

The investigated herd consisted of 79 Friesian cows, 42 of them were pregnant for the second time and 37 were pregnant heifers. They were imported from HOLLAND, 1984 by the

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Agricultural company for milk production (Faraskoor - Demiatta). All animals were pregnant in the last trimester of pregnancy and vary in age from 2-4 years.

This herd was chosen by the New Valley Governorate to be a nucleus of a pure Freisian herd. The animals were transported by cars on 3rd December 1984 to the New Valley (El-Kharga City). After three weeks, some cases of individual abortions were observed. Abortion was followed by metritis, pyometra, depraved appetite, fever and some cases of diarrhea, together with few deaths between the dams.

Sanitary precautions and strict hygienic measures were applied including Segregation of the diseased aborted animals and through cleaning and disinfection of the stable and water troughs. This was followed by manual removal of the Retained placentae and intrauterine treatment with antibiotics and sulfonamides as well as injection of oxytetracycline with restorative treatment (glucose, saline, heart tonics and systemic antibiotics).

A total of 25 blood samples, 9 milk samples, 8 aborted fetuses and 9 vaginal swabs were taken for this study.

- 1- Blood samples were obtained to get clear sera. The sera were tested against Brucella antigen by the Rose Bengal plate test (RBPT) and the tube agglutination test (TAT) according to MORGAN, et al. (1978).
- 2- Milk samples were collected aseptically from the aborting cows and those calving normally, and were subjected to the Milk Ring test (MRT), following the technique of MORGAN, et al. (1978).
- 3- Aborted fetuses and placenta were collected in plastic bags just after abortion and delivered to the laboratory where they were subjected to Gross examination. Age of the foetus was estimated from the recorded insemination date and compared by measuring the CVR length (Curved crown-rump length). Cultures were made from the necrotic cotyledons of the placenta, foetal stomach content, foetal liver, lungs and spleen on Brucella selective medium (FARRELL, 1974) and blood agar plates.

Cultures were also made from the above mentioned organs on selenite F. broth tubes and MacConkey's agar plates and incubated at 37°C for 18 and 24 hours respectively for enterobacteriaceae.

Subculture of non-lactose fermenting colonies were subjected to further identification (Biochemical reactions after EDWARDS and EWING, 1964 and KAWFFMANN, 1966).

Slide agglutination test was used for identification of isolated salmonella serotypes using antisera obtained from Wellcome (KAWFFMANN, 1972 and CRICKSHANK, et al. 1975).

In vitro sensitivity test for the isolated strains was performed using the disc plate technique described by SOJKA, et al. (1972) and Sensitivity test agar⁺ (WHO, 1961). Eight different antibiotic discs⁺⁺ were used namely: Ampicillin (10 U); tetracycline (30 mg), Mahamycine (30 mg), Compound sulphonamide (300 mg), chloramphenicol (30 mg), Streptomycin (10 mg) and penicillin G (10 IU).

⁺ STA wellcotest, wellcome reagent limited, England.

⁺⁺ Oxoid LTD

Basingstake, Hampshire, England.

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Application of the choiced drug in Vivo on the other pregnant cows (Kanamycine 10 mg/kg. B.W. for 5 succssive days) were given by intramuscular injection.

RESULTS

The date of abortion, stage of gestation and fate of the aborting cows are presented in table (1).

Gross examination of the aborted fetuses showed no characterestic lesions except clear congestion of the lungs and signs of entritis. The removed placenta showed clear necrosis of the cotyledons.

The examined samples were negative for *Brucella abortus* either by culture or by application of serological tests.

Sallmonella typhimurium and *sallmonella dublin* were isolated on the specific media and identified biochemically and serologically.

Results of field application of the choiced drug (Kanamycine 10 mg/kg. B.W.) I.M. for 5 successive days: are, shown in table (2).

The postmortem examination of the dead cows showed congested liver and distended gall bladder. Some cases showed signs of entritis.

Table (1)
Shows the date of abortion, stage of gestation and fate
of the aborting Friesian cows

Serial No.	Date of abortion	Stage of gestation (Month)	Fate of aborting animals	
			Living	dead
1	24/12/84	8	Still living	-
2	25/12/84	8.5	-	died at 10/1/85
3	30/12/84	7	-	died at 10/1/85
4	31/12/84	8	-	died at 2/1/85
5	8/1 /85	9	Still living	-
6	27/1 /85	8.5	-	died at 30/1/85
7	30/1 /85	7	Still living	-
8	4/2 /85	8	-	died at 5/2/85
9	4/2 /85	7	-	died at 5/2/85
10	14/2 /85	8	Still living	-
11	17/2 /85	61/2	-	died at 3/3/85
12	17/2 /85	81/2	-	died at 24/2/85
13	17/2 /85	6	Still living	-
14	20/2 /85	8	-	died at 15/3/85
15	22/2 /85	7	Still living	-
16	28/3 /85	8	Still living	-
17	19/3 /85	61/2	Still living	-
18	22/3 /85	8	-	died at 27/3/85
19	29/3 /85	7	-	died at 6/4/85
Total 19			8	11

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Table (2)
The incidence of abortion before and after treatment

Month	Normal calving	Abortion	Abortion (%)
I. Before Treatment:			
December	3	4	(54%)
January	12	3	(20%)
February	10	9	(47%)
Total	25	16	64%
II. After Treatment:			
March	17	3	(15%)
April	6	0	(00%)
Total	23	3	13%

DISCUSSION

Salmonellosis in cattle, is an acute or chronic infection which occurs in animals of all ages. In adult stock, it is generally sporadic in nature, but in extensive outbreaks abortions are common, (LAWSON, 1963).

Out of the 79 Freisian cows under investigation, 19(24%) aborted at the third trimester of gestation. Moreover, 11 of the aborting cows died within 3 weeks following abortion. OLSON (1939) reported that salmonella dublin was the cause of abortion and death of adult stock. VANDEPLASSCHE (1982) revealed that in acute septicaemic form of salmonellosis, the micro-organism is attracted to the pregnant uterus and foetus. The produced endotoxins during uterine infection will result in a complex of factors responsible for some abortions and severe metritis, which may be fatal for some of the aborting cows.

Salmonella typhimurium and salmonella dublin were recovered on the selective media in pure culture from the aborted foetal materials including the foetal stomach contents, liver and lungs. Previous isolation of non-lactose fermenting serotypes were carried out by FARIED (1976) from the stomach contents, liver and lungs of aborted calves.

In regard to the in-vitro sensitivity of the isolated organisms, it was found that kanamycin was the most effective drug. However, it was conversely reported by POHL, et al. (1979) that salmonella typhimurium and salmonella dublin were more sensitive to gentamycin and terramycin.

The application of control measures, including the intramuscular injection of kanamycin (10 mg/kg B.W.) for 5 successive days, together with disinfection of the stables, water and feed troughs, resulted in a marked decrease of the abortion rate.

Concerning the source of infection and the spread of the disease, it is suggested that those animals were carriers. The stress of transportation, change of the ration, management and advance of pregnancy, might be the direct causes behind the flare up of the disease.

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