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دراسات على التهاب الضرع في حيوانات المزرعة بالمملكة العربية السعودية (الاحساء)

١ ـ دراسات تحليلية

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فحصت عدد ٨٢ ، ٣٣١ ، ٣٤٧ ، ٦٢ حالة التهاب ضرع في الأبقار ـ النعاج واناث الماعز والنيق وكانت أهم الانواع هي الالتهاب المزمن أو الصديدي وقد حللت نتائج هذه الدراسة لتبيان العلاقة بين النوع والعمر والسن وطرق التربية ونوع وجنس الميكـــــروب المعزول والمسبب للحالة المرضية .

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STUDIES ON MASTITIS IN FARM ANIMALS IN AL-HASA
I- ANALYTICAL STUDIES
(With 5 Tables)

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SUMMARY

Total numbers of 82, 331, 347 and 62 mastitis cases in cows, ewes, nannies, and she-camels respectively were diagnosed at the Veterinary Teaching Hospital during the year 1986; suffering mainly from either acute, chronic or gangrenous mastitis. Analytical studies were caried out on these cases in an attempt to clarify the relationship of different forms of mastitis with species, age, management and isolated pathogens. The significance of results obtained is discussed to provide an overall view of mastitis in the area.

INTRODUCTION

Mastitis is a major disease problem which appears to be world wide in distribution and affects all species of farm animals. It attains its major significance in terms of the profound impact on the value and productive effeciency of milk-producing animals. The magnitude of this problem in many countries is well illustrated in the literature (HUNGERFORD, 1975; BLOOD; RADOSTITIS and HENDERSON, 1983). However, information on the incidence, types, economic and other aspects of mastitis in various species of farm animals in Saudi Arabia appears very scanty. At the Veterinary Teaching Hospital of the College of Veterinary Medicine and Animal Resourses in King Faisal University, an opportunity exists for the collection and analysis of some data relating to mastitis in several species of farm animals. Within this context, this paper is an attempt to provide some basic aspects of the much - needed information on mastitis in farm animals in Al-Hasa in Saudi Arabia.

MATERIAL and METHODS

Cattle, sheep, goats and the camels affected with mastitis and presented to the Veterinary Teaching Hospital from January 1986 to December 1986, constituted the material for this investigation. The ages of the animals and the types of infection were noted. In addition the total numbers of mastitis cases observed monthly and throughout the period of study were recorded for each of the four animal species under study. Furthermore, all cases in which bacteriological examination was possible, were surveyed and the identified organisms were noted.

RESULTS

Table (1) shows bovine mastitis cases during the year 1986. It can be seen that a total number of 82 cases were diagnosed in this species seen as acute, chronic and gangerenous cases in total numbers of 64, 15 and 3 cases respectively. The table also shows the monthly distribution of these cases, according to each age group.

In table (2), it is seen that a total number of 331 mastitis cases were diagnosed during the study period. These were manifested as acute, chronic, or gangerenous cases with annual totals of 156, 100, and 75 respectively. The number of cases seen monthly in each age group from 2 up to 5 years old also indicated.

A total number of 347 mastitis cases were diagnosed in goats during the year 1986 (Table 3). Clinically, the cases were either acute, chronic or gangereuous reaching total numbers of 131, 99 and 117 cases respectively. For each age group ranging from 2-5 years, the total number of cases seen each month is illustrated.

Mastitis in She camels reached a total number of 62 cases (Table 4) during the period of investigation. Acute, chronic, and gangereuous cases were diagnosed reaching total numbers of 40, 18 and 4 respectively. For each age group the total number of cases diagnosed each month during the year 1986 is seen.

In table (5) the main species of bacteria isolated from mastitis cases in cattle, sheep, goats and camels are reported. These revealed mainly Staph. aureus and also included Streptococcus spp., E. coli, Klebsiella spp, Pasteurella spp, Enterobacter spp. Corynebacterium spp. and Psuedomonas spp.

DISCUSSION

Sheep and goats constitute the biggest numbers of livestock species in Saudi Arabia (FAO-WHO-OIE, 1977). This fact seems to be clearly reflected in the relatively large numbers of mastitis cases observed in these two species, not necessarily to be an indication of a high incidence of the disease.

It is noted in the results reported here that in cattle and camels, acute cases of mastitis represent the majority (78% in cattle and 64% in camels) of mastitis cases seen in each of these two species.

It is quite interesting to note that this picture is different from the situation in sheep and goats in which acute cases do not appear to represent the majority of mastitis cases (37% in sheep and 47% in goats). An explanation for this contrast does not appear according to the limited data available at the moment. On the other hand, however, the predominance of acute cases in cattle is in agreement with observations reported by RAZIG and EL BESHIER (1987) relating to observations on mastitis in a dairy farm in Al-Hasa.

The percentages of chronic mastitis cases in sheep, goats, and camels appear strikingly comparable (30%, sheep, 28%, goats and 29% for camels). On the other hand the percentage of chronic cases in cattle is considerably lower the range observed in the other 3 species (18% for cattle). Since camels, sheep and goats are the animal species associated with nomadic life in Saudi Arabia, in contrast with cattle which are linked with urban settlement and established farms, it appears reasonable to speculate that this factor may be significantly effective

towards this contrast observed in percentages of chronic mastitis due to the obvious differences in animal management and the available veterinary care between the two contrasting setups.

The incidence of gangrenous mastitis appears much higher in sheep and goats than in cattle and camels. It appears probable that due to some factors, sheep and goats may be more predisposed towards gangrenous mastitis than cattle and camels. It is not possible to explain these observations purely on bacteriological basis because several organisms are capable of causing mastitis in all these species. It is also rather interesting to note that in sheep and goats, the incidence of the 3 types of mastitis described in this study is fairly comparable within each species unlike in cattle and camels in which the acute type dominates the overall picture of mastitis in both species.

Regarding the main pathogens isolated from mastitis cases in the different animal species, it is clearly illustrated that Staph. aureus was the main bacterial agent isolated from all four species. It therefore appears to have a major aetiological significance in relation to mastitis. This is in general agreement with observations reported by several investigators in other countries. (HUNGERFOR, 1975; SABAH, 1981; BLOOD, RADOSTITIS and HENDERSON, 1983).

According to LEESE (1927), mastitis is not at all common in the one-humped camel. Although recent reports on mastitis in the camel are not available for us at present; it appears possible to speculate that the number of mastitis cases noted in camels in this study appears significant and suggest that the condition in this species is probably not uncommon. This hypothesis seems to be well supported by the possibility that the total number of camels in Al-Hasa is far less than some other areas in Saudi Arabia.

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Table 1. NUMBERS AND TYPES OF BOVINE MASTITIS CASES DIAGNOSED AT VETERINARY TEACHING HOSPITAL FROM JAN. 1986 TO DEC.1986

Type	ACUTE			CHRONIC			GANGRENOUS			Total
Age / Date	2-3 y.	3-4 y.	4-5 y.	2-3 y.	3-4 y.	4-5 y.	2-3 y.	3-4 y.	4-5 y.	
Jan.	-	-	7	-	-	3	-	-	-	10
Feb.	-	-	4	-	-	-	-	-	-	4
Mar.	-	-	6	-	-	2	-	-	1	9
Apr.	-	-	1	-	-	2	-	-	-	3
May.	-	-	8	-	-	-	-	-	-	8
Jun.	-	-	2	-	-	-	-	-	1	3
Jul.	-	-	-	-	-	-	-	-	-	-
Aug.	1	-	-	-	-	-	-	-	1	2
Sep.	2	6	-	-	-	-	-	-	-	8
Oct.	1	5	2	2	-	1	-	-	-	11
Nov.	2	5	2	-	-	2	-	-	-	11
Dec.	3	6	1	-	-	3	-	-	-	13
Total	9	22	33	2	-	13	-	-	3	82
	64 (78 %)			15 (18.3 %)			3 (3.7 %)			

Table 2. NUMBERS AND TYPES OF OVINE MASTITIS CASES DIAGNOSED AT VETERINARY TEACHING HOSPITAL FROM JAN. 1986 TO DEC. 1986

Type	ACUTE			CHRONIC			GANGRENOUS			Total
Age / Date	2-3 y.	3-4 y.	4-5 y.	2-3 y.	3-4 y.	4-5 y.	2-3 y.	3-4 y.	4-5 y.	
Jan.	11	4	2	3	2	-	6	3	-	31
Feb.	3	1	1	2	5	-	2	-	-	14
Mar.	3	5	-	2	5	4	-	7	1	27
Apr.	2	6	-	1	7	1	-	5	2	24
May.	8	-	-	-	11	-	-	8	-	27
Jun.	9	-	-	3	6	-	7	-	-	25
Jul.	7	-	1	2	5	-	-	-	2	17
Aug.	12	-	-	7	3	-	1	-	2	25
Sep.	8	9	8	6	2	-	2	-	2	37
Oct.	10	10	1	8	1	-	1	7	1	39
Nov.	9	8	2	6	1	-	3	4	2	35
Dec.	6	8	2	7	-	-	1	5	1	30
Total	88	51	17	47	48	5	23	39	13	331
	156 (47.1 %)			100 (30.2 %)			75 (22.7 %)			

Table 3. NUMBERS AND TYPES OF CAPRINE MASTITIS CASES DIAGNOSED AT VETERINARY TEACHING HOSPITAL FROM JAN. 1986 TO DEC. 1986

Type	ACUTE			CHRONIC			GANGRENOUS			Total
Age / Date	2-3 y.	3-4 y.	4-5 y.	2-3 y.	3-4 y.	4-5 y.	2-3 y.	3-4 y.	4-5 y.	
Jan.	13	11	1	4	5	1	8	6	2	51
Feb.	4	5	5	4	9	-	1	10	4	42
Mar.	8	3	-	-	6	1	3	7	2	30
Apr.	1	4	-	2	6	1	2	11	-	27
May.	-	9	-	7	-	-	6	9	-	31
Jun.	5	-	-	4	5	-	3	9	1	27
Jul.	8	1	-	12	-	-	11	-	-	32
Aug.	4	-	11	7	9	-	4	5	2	42
Sep.	2	6	-	2	-	-	2	1	-	13
Oct.	2	7	5	1	2	-	3	2	-	22
Nov.	2	1	-	3	-	-	-	-	-	6
Dec.	8	3	2	2	6	-	3	-	-	24
Total	57	50	24	48	48	3	46	60	11	347
	131 (37.8 %)			99 (28.5 %)			117 (33.7 %)			

Table 4. NUMBERS AND TYPES OF CAMEL MASTITIS CASES DIAGNOSED AT VETERINARY TEACHING HOSPITAL FROM JAN. 1986 TO DEC. 1986

Type	ACUTE			CHRONIC			GANGRENOUS			Total
Age / Date	2-3 y.	3-4 y.	4-5 y.	2-3 y.	3-4 y.	4-5 y.	2-3 y.	3-4 y.	4-5 y.	
Jan.	-	-	14	-	-	-	-	-	-	14
Feb.	-	-	-	-	-	-	-	-	-	-
Mar.	-	-	1	-	-	2	-	-	-	3
Apr.	-	-	-	-	-	2	-	-	-	2
May.	-	-	1	-	-	2	-	-	-	3
Jun.	-	-	-	-	-	2	-	-	-	2
Jul.	-	-	-	-	-	-	-	-	-	-
Aug.	-	-	2	-	-	2	-	-	1	5
Sep.	-	-	4	-	-	1	-	-	-	5
Oct.	-	-	7	-	-	1	-	-	1	9
Nov.	-	-	2	-	-	4	-	-	-	6
Dec.	-	-	9	-	-	2	-	-	2	13
Total	-	-	40	-	-	18	-	-	4	62
	40 (64.5 %)			18 (29.0 %)			4 (6.5 %)			

Tble 5. MAIN PATHOGENS ISOLATED FROM MASTITIS CASES IN FARM ANIMALS DIAGNOSED AT VETERINARY TEACHING HOSPITAL FROM JAN.1986 To DEC.1986

Animals	Main Pathogens	Percentage
Cows	Staph. aureus	62.50 %
	E. coli	18.75 %
	Pasteurella spp.	12.50 %
	Klebsiella spp.	6.25 %
Ewes	Staph. aureus	46.50 %
	Streptococcus spp.	37.30 %
	Corynebacterium spp.	11.60 %
	Pseudomonas spp.	4.60 %
Nannies	Staph. aureus	58.00 %
	E. coli	16.60 %
	Klebsiella spp.	8.30 %
	Enterobacter spp.	8.30 %
She camels	Staph. aureus	50.00 %
	Streptococcus spp.	33.30 %
	Pasteurella spp.	16.70 %