

COMMON DISEASES OF CAMELS (*Camelus dromedarius*) IN EASTERN PROVINCE OF SAUDI ARABIA

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ABSTRACT

Various diseases of camel have been documented during the period 1987-1995. The sequence of incidence according to abundance were found as follows: parasitic diseases (38.0%), digestive diseases (27.6%), skin infection (13.1%), respiratory diseases (12.8%), metabolic disorders (7.5%) and mastitis (4.0%). Factors, which might contribute to the occurrence of these diseases, were discussed.

Key words: Camels, diseases, Saudi Arabia

INTRODUCTION

In Saudi Arabia the population of camels stands at 600,000 head (Anonymous, 1998). The importance of camel as potential producer of meat, milk and hide was documented by Shoal (1983). Contact between camels and other farm animals has been increasingly noticeable. This together with the considerable improvement in veterinary services may explain the increasing reports of various diseases among camels in the last decade. Diseases are known to be the main hindrance in animal production. Various types of camel diseases were reported to occur in Saudi Arabia (Mustafa, 1979; Gameel *et al.*, 1992; Alhendi *et al.*, 1998). The information presented in the present report was meant to provide data to the researchers and practitioners working in the field of camel diseases in Saudi Arabia and surrounding countries.

MATERIALS AND METHODS

The materials of this study comprised 1688 camels presented to the Veterinary Teaching Hospital, King Faisal University, Eastern Province, Saudi Arabia during the period of 1987-1995. The disease diagnosed in these camels included respiratory, digestive, parasitic, skin, mastitis and metabolic diseases. Number of cases and percentage incidence within the same year and total number of cases and percentage incidence of each disease within period of 1987-1995 were analyzed.

RESULTS AND DISCUSSION

The results of prevalence of various camel diseases during a period of nine years (1987-1995) is shown in Table 1.

Respiratory diseases

Incidence of respiratory diseases was at its highest levels in the year 1987 (3 cases), followed by 1994 (29 cases) and 1995 (32 cases). Slightly lowered levels were observed in the years 1988 (26 cases), 1989 (25 cases), 1991 (23 cases) and 1993 (18 cases). The lowest incidence was recorded in the year 1990 (14 cases) and 1992 (11 cases). The percentage of incidence in the investigated period was 12.8%. The incidence of respiratory diseases e.g. pneumonia is considered low when compared with that in other animals (Hafez *et al.*, 1991). This may be due to the fact that the diagnostic respiratory signs usually seen in other farm animals, are hardly detectable or absent in some cases of camels. Besides this, the camels owners in remote areas prefer to use the traditional treatments of respiratory infection rather than travel a long distance seeking veterinary services. This was reported to occur in camels by a number of authors (El-Bendary *et al.*, 1987; Hafez *et al.*, 1991).

Digestive diseases

The incidence of the digestive diseases in the period between 1987 to 1995 was 27.6%. The highest incidence (182 cases) was recorded in 1987 which declined to 69 cases in the year 1988 and to 40 cases in 1989. Thereafter with the exception of the year 1991 (48 cases) the incidence continued at low level in the 1990 to 1995 with case incidence ranging between 18-28 cases only. This may be related to the continuous improvement of both the veterinary services and clinical laboratory diagnosis. Change of the feeding pattern was noticed in many cases, as the main cause of the reported digested disorder. This confirms the findings of Alhendi (1996), El-Sanousi and Gameel (1993) and Gameel *et al.* (1994).

Table 1: Number of cases and percentage incidence of camel diseases from 1987 to 1995.

Year	Respiratory diseases	Digestive diseases	Parasitic infections	Mastitis	Metabolic disorders	Skin infection	Total
1987	38(7.8)	182(37.3)	95(19.5)	39(8.0)	52(10.6)	82(16.8)	488
1988	26(12.6)	69(33.5)	62(30.1)	12(5.8)	26(12.6)	11(5.3)	206
1989	25(14.9)	40(23.8)	72(42.9)	6(3.6)	14(8.3)	11(5.6)	168
1990	14(16.5)	28(32.9)	30(35.3)	1(1.2)	7(8.2)	5(5.9)	85
1991	23(18.5)	48(38.7)	39(45.4)	2(1.6)	0(0)	12(9.7)	124
1992	11(16.7)	20(30.3)	30(45.4)	0(0)	3(4.5)	2(3.0)	66
1993	18(22.8)	20(25.3)	27(34.2)	3(3.8)	0	11(13.9)	79
1994	29(14.8)	21(10.7)	108(55.1)	2(1.0)	7(3.6)	29(14.8)	196
1995	32(11.6)	18(6.5)	178(64.5)	2(0.7)	17(6.2)	59(21.4)	306
Total	216(12.5)	446(26.0)	641(37.3)	67(4.0)	126(7.3)	222(13.0)	1718

Parasitic infestation

It is obvious from the data that the bulk of diseases recorded among camels were of parasitic nature. The incidence was at its lowest level in the years 1990 to 1993, ranging from 27 cases to 30 cases. The highest level of incidence was recorded in the year 1994 (108 cases) and in 1995 (178 cases). In the present data parasitic infestation was relatively the highest among other diseases diagnosed in camels (38.0%). Gastrointestinal parasitic infestation is considered as one of the major problems in camels in Saudi Arabia (Banaja and Ghandour, 1992). Unhygienic environment is considered as the main predisposing factor for the occurrence of these types of diseases. El-Bihari (1985) reported in details that the most parasitic infestation in Eastern Province were *Haemonchus* spp and ticks.

Mastitis

As observed with other diseases, the year 1987 was characterized by the highest incidence of mastitis (39 cases). During the year 1989-1995, the incidence was relatively low ranging from 0-6 cases. The overall percentage of mastitis incidence during the whole period of investigation was 4.0%. Most of the clinical cases of mastitis diagnosed were chronic and acute in nature. Gangrenous mastitis was the least diagnosed form.

Camel is generally know to be less susceptible to udder infection. This may be attributed to the protective setting posture of the udder. In addition, most of the cases brought to medicine clinic were at the late chronic stage and needed surgical interference. The occurrence of different types of mastitis in camels in Saudi Arabia have been reported by Barbour *et al.* (1985), Hafez *et al.* (1987) and Remadan *et al.* (1987).

Metabolic disorders

The peak incidence recorded during 1987 (52 cases). Thereafter, the incidence was in continuous decrease and in the 1991 and 1993 no cases of

metabolic disorders were recorded. The incidence during the investigated period was 7.5%. Reports on metabolic disorders in camels are scanty. However, Radwan (1995) and Gameel *et al.* (2000) described foreign bodies and cathexia in details, respectively.

Skin infection

During the year 1988 to 1993 very low incidence of skin infection was observed. In the year 1987, 82 cases were diagnosed. A noticeable increase in the incidence was observed during 1994 and 1995 (29 and 59 cases, respectively). The increase incidence of skin infection among camels in 1994 and 1995 could be attributed to the increase in the awareness of camel owners toward these types of infections and to the noticeable improvement in the veterinary services. Mange was the most frequently diagnosed skin infection. Reports on skin infection in the Eastern Province of Saudi Arabia have included those by Alhendi *et al.* (1994), Alhendi *et al.* (1998), Cheema (1983) and Hassanein *et al.* (1993).

In conclusion, the present data brought attention to the types of the diseases occurring in Saudi Arabia. Parasitic and digestive diseases are the most important ones among investigated diseases in camels. Hence, treatment and control of these diseases are of para importance for future improvement of health and better productivity of camels.

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