

EFFICACY OF DORAMECTIN AGAINST SARCOPTIC MANGE IN CAMELS

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ABSTRACT

A total of four camels aged between seven to eight years were presented to the College Clinics with a history of inappetance and intense itching around neck, inguinal and perineal regions. Based on skin scrapping examination and clinical signs, mange infestation of *Sarcoptes scabiei* was confirmed. Successful therapeutic management was done with the use of doramectin @ 0.2 mg/kg b.wt. s/c along with supportive therapy. Complete recovery and disappearance of mites from skin scrapping was noticed for all four camels after four weeks.

KEY WORDS: Camels, *Sarcoptes scabiei* Mange, Doramectin, Clinical efficacy.

INTRODUCTION

Camel is a source of milk, meat, drought power and serves as a means of transportation; it also supports the survival of millions of people in semi-arid and arid areas of the world (Schwartz and Dioli, 1992). Camel health is severely affected by ectoparasitic infestations causing chronic blood losses as well as transmitting various diseases and damaging hide and udder tissues (Walker *et al.*, 2003). Sarcoptic mange in camels caused by *Sarcoptes scabiei var cameli* is one of the most serious, contagious, zoonotic and debilitating disease affecting both dromedary camel and llamas (Higgins, 1983). Sarcoptic mange mite is stubborn and not easily amenable to chemicals. Burrowing nature of sarcoptic mites lead to tissue damage, uneasiness, itching and pruritis. Doramectin is a newer member of class avermectin which is having wide spectrum of activity against ectoparasites and is safe with minimum side-effects. The present report deals with evaluation of efficacy of parenteral administration of doramectin in treating camels naturally infested with *Sarcoptic* mange.

MATERIALS AND METHODS

A total of 4 camels aged between 7-8 years were presented to Dr V. M. Jhala Clinical Service Complex, Deesa, SDAU (North Gujarat), with a history of inappetance and intense itching around neck, inguinal and perineal regions. Clinical examination revealed patchy alopecia throughout the body especially around neck, inguinal and perineal region and at the base of the tail. Thick keratinized skin was noticed at neck region along with exudation and scab formation .

To know the degree of infestation, number of mange per unit area (4 cm²) was counted on neck, inguinal and perianal region before and after parenteral administration of doramectin. Deep skin scrapings were taken from each animal on day 0, 7, 14 and 28 and were processed with 10% KOH solution. Presence of *Sarcoptes scabiei* mites were observed and identified on the basis of their characteristic morphological features (Soulsby, 1986).

Rectal temperature of all camels was recorded on day of presentation and 7th day post- treatment. About 5 ml of blood was collected from jugular vein in a sterile K₃EDTA vial from all the animals on first day and on 7th day to study the differential leucocyte count. The animals were treated with Doramectin @ 0.2 mg/kg body wt s/c, Chlorpheniramine maleate 15 ml i/m once and Liver extract 15 ml i/m for 3 days.

RESULTS AND DISCUSSION

Based on history, clinical signs including appearance and location of skin lesions camels were suspected to be suffering from scabies and were further confirmed by the presence of *Sarcoptes scabiei* mites in skin scrappings.

On 7th and 14th day post-treatment, there was notable decrease in number of mites in skin scrapping and animals showed marked improvement in skin lesions which was followed by complete recovery with disappearance of mites in skin scrapping examined at 28th day.

The efficacy (%) of doramectin 7th day post-treatment was found to be 57.63% which further increased to 88.14% and 100%, on 14th and 28th day post-treatment, respectively (Table 1).

Table 1: Efficacy of doramectin (0.2 mg/kg s/c) against Sarcoptic mange in camels

Sr. No.	Age (in years)	Number of ticks per unit areas (4 cm ²)			
		0 th day	7 th day	14 th day	28 th day
1	7	36	14	4	0
2	8	46	20	4	0
3	7.5	40	16	5	0
4	8	55	25	8	0
Average value		44.25	18.75	5.25	0
Efficacy (%)		-	57.63	88.14	100

Lesions consisting of wrinkled skin with fissuring and formation of crust along with increased keratinisation and focal alopecia were marked in present study. Similar types of lesions have also been observed earlier in camels due to sarcoptic mange (Raisinghani and Kumar, 1990).

Increase in relative lymphocyte values and lowered neutrophil count (Table 2) found in present study within 7 days of treatment were similar to findings of Gorakh Mal *et al.* (1998). This might be due to the response of inflammatory cytokines released in response to irritation and tissue

Table 2: Differential leukocytes count in Sarcoptic mange affected camels before and 7 days after treatment

Sr. No	Age (in years)	Rectal temperature (°F)		Differential leukocyte count									
				Neutrophil (%)		Lymphocytes (%)		Monocytes (%)		Eosinophils (%)		Basophils (%)	
		0 day	7 th day	0 day	7 th day	0 day	7 th day	0 day	7 th day	0 day	7 th day	0 day	7 th day
1	7	99.8	99	36	48	48	42	4	2	11	8	1	0
2	8	100.3	99.2	35	47	48	43	4	2	13	7	0	1
3	7.5	100.2	99.3	36	50	50	40	3	1	11	9	0	0
4	8	100.6	99.3	36	48	47	42	4	2	11	7	2	1

destruction caused by mite infestation. The relative eosinophil counts recorded in affected camels were comparatively higher and was in agreement with report of Raisinghani *et al.* (1989). Eosinophilia is common feature in parasitic diseases of skin containing higher concentration of mast cells.

Control of camel-mange offers limited choice mainly because of the toxic nature and residual property of the repeated use of chemicals which leads to resistance problem (Lang, 1982). The long-acting endectocidal avermectins and their successful use as acaricides has facilitated non-toxic and high efficacy line of treatment. Parenterally administered doramectin has been shown to exhibit a wider spectrum and longer protective activity (Goundie *et al.*, 1993).

All the camels recovered within 28 days post-treatment. The treatment resulted in improvement in skin texture, disappearance of crusts, wrinkles and scabs. The skin showed appearance of fresh shine with glossy hair 1-3 mm long prior to second treatment and disappearance of itching with parasitological cure noticed on 28th day. Similar recovery was also observed by Parmar and Singh (2005).

The present study confirms high potential of doramectin as systemic acaricide against *Sarcoptes mangle* in camels. Also due to its broad range effect on other endo- and ecto- parasites, the therapy can improve overall health and productivity of the animal.

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