Comparative Study on Riding Performance of Male and Female Camels

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ABSTRACT

Three male and three female camels aged 6-8 years, weighing 552±40.6 kg and 495±10.5 kg, respectively, were used to assess the comparative riding performance on 3.7 km circular desert track. The camels were trained for riding for a period of three months. The riding speed was maintained at 8-9 km/h and the camels were targeted to complete 15 km at a stretch. The average respiratory frequency, pulse rate and rectal temperature before riding were 10 per min, 48 per min and 36.80 °C, respectively. The respiratory frequency on riding increased by 150% and 289% and the pulse rate in male and female camels 72% and 60%, respectively. The increase in rectal temperature was 2.4 in male and 2.9 in female above normal temperature. The level of serum lactate and cortisol increased on riding in both males and females. The creatinine kinase and lactate dehydrogenates activity decreased significantly whereas, no significant changes were observed in r-glutamyl transferase activity. The level of serum lactate (21%) and cortisol (65%) was observed higher in the males than the females, which indicates better riding endurance in females.

Key words:, Riding performance, Speed, Camel, India

INTRODUCTION

In a dry land ecosystem, camel rearing is regarded as a fairly constant resource for sustenance. Camels can travel long distances on sandy stretches carrying man and materials and provide bio-energy for agriculture operations (Rai and Khanna, 1994). It is a versatile working animal suitable for riding (Burgemeister, 1978 and Rai *et*

al., 1992) and also for many types of traction force including agricultural operations.

Since the available information on riding potential of camel in different sex with respect to physiological and biochemical attributes is meager, the present study was under taken to assess comparative performance on riding in male and female camels using physiological and biochemical tools.

MATERIALS AND METHODS

Three male and three female single-humped camels (*Camelus dromedarius*), aged 6 to 8 years, weighing 552±40.6 kg and 495±10.5 Kg, respectively, were trained for riding for a period of three months on a 3.7 km circular desert track. The riding speed was maintained at 8-9 km/h and experimental camels were targeted to complete 15 km at a stretch. The animals were maintained under standard stall-feeding and management conditions as per norms fixed by NRCC, Bikaner. The respiratory frequency, rectal temperature and pulse rate were recorded and blood samples collected before and after riding performance and after over night rest. Blood serum was separated and used for different biochemical estimations. The average environmental temperature during the course of study was 32.6±1.01oC and vapor pressure 24.0±0.72 nmHg.

The blood serum glucose, triglycerides, creatine kinase, gama glutamyl transferase (Szasz, 1976), lactate dehydrogenase (Klin, 1970), Lactate (Schon, 1965) and Cortisol were determined. Reagent kits from Ranbaxy Pvt. Ltd., India and Sigma Co. were used for the above biochemical estimation. Statistical analysis of data was done according to Snedecor and Cochran (1967).

RESULTS AND DISCUSSION

Data on cardinal physiological responses were given in Table 1. The average respiratory frequency, pulse rate and rectal temperature before riding were 10 per min., 48 per min. and 36.80 °C, respectively. The respiratory frequency after riding increased by 150% and 289% to a pulse rate in male and female camels of 72% and 60%, respectively. The increase in rectal temperature was 2.4 in males and 2.9 in females above normal rectal temperature. A gradual

decrease was observed in the speed of camel with the increase in distance covered.

Data on glucose, triglycerides, cretine kinase, r-glutamyl transferase, lactate dehydrogenase, lactate and cortisol is given in Table-2. The level of glucose increased on riding in both male and female and reached the initial level with in 24 hours' rest. Creatine kinase activity decreased significantly on riding in both male and female, whereas, no significant change was observed in r-glutamyl transferease activity. Lactate dehydrogenase activity decreased in both male and female. There was a significant increase in serum lactate level on riding. Cortisol increased significantly on riding in both male and female camels.

Table 1: Means and standard error of pulse, respiration rate and rectal temperature on riding performance of male and female camels.

Sex	Body Wt. (kg)	Pulse/min		Respiration/min		Rectal Temp.(°C)	
		before	after	before	after	before	after
Male	552.0 ±40.7	47.0 ±1.7	81.0 ±3.9	10.0 ±0.3	25.0 ±2.4	37.0 ±0.1	39.4 ±0.4
Female	495.0 ±10.5	48.0 ±1.9	77.0 ±2.8	9.0 ±0.5	35.0 ±0.2	36.6 ±0.2	39.5 ±0.4

Table 2: Means and standard error of blood biochemical analysis of male and female camels.

Parameters	0 hour		After 2 rounds		After 4 rounds		After 24 hours	
	M	F	M	F	M	F	M	F
Glucose (mg/dl)	66.52 ±3.49	56.92 ±6.06	97.76 ±11.35	95.25 ±1.76	112.78 ±15.51	112.87 ±4.41	63.44 ±4.57	56.95 ±1.29
Triglyceri-des (mg/dl)	25.84 ±1.12	32.36 ±3.11	33.84 ±4.00	33.10 ±3.18	32.45 ±3.45	30.10 ±4.13	17.17 ±3.66	37.24 ±1.04
CK (iu/L)	86.21 ±20.97	75.89 ±13.14	67.87 ±16.94	55.50 ±14.98	63.02 ±12.32	55.27 ±18.68	85.09 ±18.21	76.88 ±6.62
VGT (iu/L)	31.39 ±1.63	28.02 ±2.04	26.46 ±2.45	24.42 ±1.40	28.63 ±2.26	24.27 ±1.95	29.58 ±9.27	28.69 ±1.79
LDH (iu/L)	301.38 ±8.12	368.68 ±25.28	320.47 ±6.00	385.66 ±17.94	259.93 ±7.22	267.43 ±17.86	313.96 ±11.09	402.50 ±33.57
Lactate (mg/dl)	2.76 ±0.53	4.04 ±0.58	22.95 ±3.32	15.07 ±1.05	39.40 ±3.96	32.62 ±2.31	3.29 ±0.55	4.07 ±0.27
Cortisol	12.75 ±1.33	11.50 ±0.86	29.75 ±4.82	21.16 ±3.34	52.25 ±7.49	31.67 ±0.34	12.85 ±1.94	12.25 ±1.69

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