STUDY ON HAEMATOLOGICAL AND BIOCHEMICAL PARAMETERS OF ADULT KUCHCHHI CAMELS (*Camelus dromedarius*)

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ABSTRACT : A study was carried out to investigate the haematological and biochemical levels of Kuchchhi Camels . All the values obtained were comparable to the previous reports except PCV , and TEC which were lower and higher eosinophil count as compared to previous reports.

KEY WORDS : Haematological , biochemical , Kuchchhi camel

INTRODUCTION

Camel (*Camelus dromedarius*) is an important livestock species for arid and semi arid regions of India and known as beast of burden. Camels have been bred owing to their extra ordinary powers to withstand thirst and hunger for long duration in the most inhospitable conditions. Due to their physiological adaptation some of the haematological and biochemical parameters are different from the other species of animals. Haematological and biochemical parameters can often provide valuable information regarding health aspect of the animals and disease diagnosis. Some informations on haematological and biochemical parameters of one humped camel is available from Sudan, Egypt, Saudi Arabia, India, Iraq and Iran (Lakotia *et al.*, 1964; Barakat and Abdel- Fattah, 1971; Ghosal *et al*., 1975; Ghodsian *et al*., 1978 and Al ani *et al*., 1992), where in most of these studies the animals were used from different climatic conditions and different breeds. Thus, the values obtained in one country could not be taken as a standard as in other countries having different climate. Therefore, the present study was undertaken to determine reference range for haematological and biochemical values of apparently healthy adult male Kuchchhi camels of North Gujarat region.

MATERIALS AND METHODS

All the animals were clinically healthy and free from internal and external parasites. Blood was collected by jugular venopuncture method (Kolmer *et al.,* 1959) using 18 gauge, 5 cm long hypodermic needle. About 5 ml of blood was taken into a heparinised test tube. Immediately after collection of blood, it was processed for different haematological parameters as per standard procedures described by Brar *et al.* (2000). Samples containing heparinised blood were centrifuged for 10 minutes at about 3000 r.p.m for plasma separation and then stored at -20 ^{o}C temperature until analyzed for biochemical constituents estimated as per the procedures described in respective commercial kits.

RESULTS AND DISCUSSION

The haematological and plasma biochemical values are presented in Table. 1. The haemoglobin concentration (12.71 + 1.39 g/ per cent), total leukocytes count (18.31 + 3.66 Thousand/cu mm) and differential leukocytes count (Neutrophils, 33.10 + 7.61 per cent and Lymphocyte, 56.30 + 8.81 per cent) obtained in the present study were in similar range whereas, packed celled volume (21.10 + 2.92 per cent) and total erythrocytes count (4.45 + 0.53 million/cu mm) were lower than those reported by previous authors (Nyang'ao *et al*., 1997; Rezakhani *et al*., 1997; Sarwar and Majeed; 1997 and Chaudhary *et al*. 2002). Manefield and Tinson (1997) opined that low packed cell volume indicates environmental stress whereas, eosinophil count (10.8 + 5.45 per cent) was higher than those reported by Nyang'ao *et al*. (1997) and Sarwar and Majeed. (1997).

Glucose (92.10 + 9.56 mg/dl), Plasma Protein (6.82 + 1.31 g/dl) and AST values (82.04 + 18.75 U/dl) in Kuchchhi camels were similar to those reported by Bengoumi *et al*. (1997-b) and Chaudhary *et al*. (2002). However, LDH (308.5 + 20.12 U/L) and CK (176.2 + 19.62 U/L) were higher than those reported by Nyang'ao *et al*. (1997). The AST value obtained in the present study was lower than that reported by Bengoumi *et al*. (1997 a) and higher than that reported by Sarwar and Majeed (1997). These differences may be attributed to the physiological status of the animals in different conditions.

Table.1 Haematological and biochemical value of normal Kuchchhi camels in North Gujarat

Parameters	(Mean ± S.E)	Range
Haemoglobin (g%)	12.71 ± 1.39	8.4-15.4
Packed cell volume (%)	21.10 ± 2.92	26-35
TEC (million/cu mm.)	4.45 ± 0.53	6 -12
TLC (Thousand/cu mm)	18.31 ± 3.66	8.8-30
Neutrophil (%)	33.10 ± 7.61	27-50
Lymphocyte (%)	56.30 ± 8.81	45-70
Eosinophil (%)	10.8 ± 5.45	0-2
Monocyte (%)	-	0-1
Glucose (mg/dl)	92.10 ± 9.56	45-102.28
Total proteins (g/dl)	6.82 ± 1.31	5.4-7.8
LDH(U/L)	308.5 ± 20.12	247-453
CK(U/L)	176.2 ± 19.62	42-160
AST (U/dl)	82.04 ± 18.75	60.04-100.27

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