

Serum total proteins and serum total cholesterol levels in Gaolao Cattle

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Abstract

The healthy female Gaolao cattle were selected and divided in three groups of ten animals each with reference to age. The blood samples were processed for clear serum collection and estimation of serum total proteins, albumin, globulin, albumin and globulin ratio and serum total cholesterol. It is reported that female calves had low total proteins, albumin and globulin than the adult cows.

Keywords: Biochemical constituents, Blood, Gaolao breed, Cattle.

Introduction

The blood biochemical constituents of many indigenous breeds of cattle have been reported (Samad *et al.*, 1980; K. Venugopal Naidu and A. Ramamohana Rao, 1982; Deshpande, 1983; Dutta *et al.*, 1988; Madhumeet Singh and H.C. Pant, 1998). However, the blood biochemical constituents of Gaolao cattle of Vidarbha region have not been reported yet. The present paper is an attempt to record Serum Total Protein and Serum Total Cholesterol levels in various age groups of Gaolao cattle.

Material and Methods

The Gaolao cattle of various age groups, female calves (birth to 12 months), heifers (1 to 3 years) and adult cows (above 3 years) from "Government Cattle Breeding Farm, Hetikundi, Dist. Wardha" were selected for the study. There were ten healthy animals in each group.

Blood samples were collected from jugular vein in the morning hours before the animal were fed and watered and were immediately processed for the blood serum separation. Clear serum was separated and kept at -20°C till used for biochemical analysis. The serum Total Proteins and albumin were estimated by Biuret and BCG Dye Binding Method by using total proteins and albumin Kit manufactured by Qualigens Diagnostics. Serum globulin was calculated as the difference between total protein and albumin. The estimation of serum total cholesterol was done by Wxbenga and Pileggi's method by using cholesterol kit manufactured by M/s Medipro Laboratories Pvt. Ltd., Hyderabad.

Result and Discussion

Serum total proteins: The mean (\pm SE) value of serum total proteins are presented in the table. The Gaolao female calves (6.4 ± 0.53 gm%) and Gaolao heifers (6.85 ± 0.41 gm%) had lesser serum proteins

Table-1. Blood Biochemical constituents values of different age groups of Gaolao cattle.

Sr.	Particulars	Female calves (birth to 12 months)		Heifers		Adult cows	
		Mean	SE	Mean	SE	Mean	SE
1.	Serum Total Proteins (gm%)	6.4	0.53	6.85	0.41	8.38	0.68
2.	Albumin (gm%)	2.26	0.39	2.93	0.30	3.49	0.40
3.	Globulin (gm%)	4.14	0.42	3.86	0.53	4.88	0.44
4.	A:G ratio	0.54	0.18	0.82	0.13	0.76	0.09
5.	Serum Total Cholesterol (mg%)	174.74	12.17	189.53	11.02	195.26	11.90

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than the adult Gaolao cows (8.38 ± 0.68 gm%). This indicated that serum total proteins increased with age in the present study, which is in agreement with the result reported by Gaikwad *et al.* (1992) in Jersey x Red Kandhari cattle. Deshpande (1983) recorded contradictory results to the present observations.

Serum albumins: The mean (\pm SE) serum albumin in Gaolao female calves (2.26 ± 0.39 gm%), and heifers (2.93 ± 0.30 gm%) are in agreement with the observations reported by Gaikwad *et al.* (1992). The serum albumin level in adult cows (3.49 ± 0.40) is in agreement with the findings reported in Sahiwal and crosses by Singh and Chaudhari (1988).

Serum globulin: Female calves had less serum globulin than cows in the present study. The same finding is reported by Singh and Choudhary (1988) in Sahiwal and crosses.

Serum albumin and globulin ratio: The albumin and globulin ration ranged from 0.54 ± 0.18 to 0.76 ± 0.09 . This is in agreement with the findings reported by Gaikwad *et al.* (1992).

Serum total cholesterol: The mean (\pm SE) serum total cholesterol values of different age groups are presented in the table. Dutta *et al.* (1988) reported slightly less values in Jersey heifers while Singh and Pant (1998) reported contradictory results in cows of Himachal Pradesh than the present study.

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Kathiawari Horse

The superintendent of Gaekwar Contingent in 1880 suggested that the Kathiawari breed may have sprung from the wild horses of Kathiawar (a sort of Quagga, Bombay Gazette, Kathiawari, foot note, page 97). The breeding tract of the breed is Saurashtra province of Gujarat which comprises of Rajkot, Bhavnagar, Surendranagar Junagarh and Amreli districts of Gujarat. The most prominent body colour in Kathiawari horses is chestnut followed by bay (body chestnut, Foreleg up to knee and fetlock are black, Keshwali black, Hairs of tail and neck are black), grey (complete white colour) and dun (light chestnut). The physical characteristics of Kathiawari horses are concave profile, long neck, short leg and squared quarters. Face is dry and short, triangular from pale to forehead and small muzzle, big nostrils, edge of nostril is thin; small, fine and curved upright ears on 90 degrees axis that can rotate at 180 degrees, broad forehead and large expressive sensitive eyes. Tail is long, not bushy, curved well and touching to the ground, foot round and broad. Kathiawari horses have on an average 119 cm long body, 147 cm height and 160 cm heart girth. The average ear length is 15 cm. The average face length and width are 53 and 21 cm, respectively. The tail length without switch is 42 cm.