

## BLOOD SERUM CHEMISTRY (SODIUM, POTASSIUM, BICARBONATE AND CHLORIDE) OF HORSES WITH AND WITHOUT COLIC

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Colic is one of the non-infectious disease that endanger the life of horse. The clinical findings exhibited by colicky horse are restlessness evident by kicking at belly. Pain is manifested by looking at flanks, lying on back, rolling and dog sitting posture. Death of animal could be due to exhaustion, intoxication, dehydration and imbalance of the electrolytes (Blood and Radostitis, 1989). This study was carried out to sort out a reliable and readily available prognostic indicator to save the life of horse with sign of abdomina pain.

### MATERIALS AND METHODS

Twenty horses with colic were brought to the outdoor hospital, College of Veterinary Science, Lahore. They were divided into three groups A (mild), B (moderate) and C (severe) based on the severity of clinical signs. Heart rate, respiration and rectal temperature was noted. Rectal palpation was performed to confirm the colic case. Ten ml of blood was taken from 20 horses suffering from colic and 10 apparently healthy horses. Serum was separated to determine blood electrolytes (sodium, potassium, bicarbonate and chloride) by flamephotometry (Coles, 1984).

### RESULTS AND DISCUSSION

Group A, showed mild signs like alertness, swishing of tail, looking at flanks and lying on ground for short periods. In group B, they exhibited signs of moderate pain and intervals of bouts of pain was half an hour. Group C showed signs of depression, patchy sweating, rolling, struggling violently and kicking at belly due to sharp continuous pain. Rectal temperature, heart and respiration rate was elevated in all groups. Impaction of ileocaecal valve was confirmed by rectal palpation in group A with mild signs while in group B spasmodic colic was diagnosed along with moderate signs whereas group C showed severe signs due to obstruction in small intestine. In all the groups with

mild, moderate and severe signs decreased in sodium and bicarbonates was observed while potassium and chloride remained within normal range (Table 1). Increase in rectal temperature, heart rate and respiration could be due to pain, muscular exertion and severity of obstruction in the intestine. Ileocaecal impaction in group A with mild signs, spasmodic colic in group B with moderate signs and small intestinal obstruction in group C were differentiated from other types of colic like torsion, volvulus, viral and bacterial by rectal palpation (Frank, 1970; Blood and Radostitis, 1989). Decrease in sodium in all types of colic could be due to excessive loss of water and sodium as a result of sweating and urination (Datt and Usenik, 1975; Singh *et al.*, 1975; Bristol, 1982; Blood and Radostitis, 1989). Potassium and chloride remained within normal range (Singh *et al.*, 1975). Bicarbonate was decreased that might be due to metabolic acidosis (Datt and Usenik, 1975; Bristol, 1982; Blood and Radostitis, 1989).

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Table 1: Biochemical parameters (Mean±SE) in healthy and colicky horses

Parameters (m Eq/l)	Severity of colic			Healthy animals
	Mild	Moderate	Severe	
Sodium	125.2±4.46	131.5±10.97	126.2±3.93	136.05±1.48
Potassium	4.0±0.15	4.4±0.07	4.2±0.38	3.42±0.27
Bicarbonate	31.3±2.37	31.7±1.16	31.6±2.11	38.28±0.69
Chloride	89.6±2.31	83.6±5.97	90.4±4.20	102.8±1.03