

## BLOOD-BIOCHEMICAL PROFILE DURING RETENTION OF PLACENTA (ROP) IN CROSSBRED CATTLE

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### ABSTRACT

The present investigation was carried out to study the blood-biochemical profile during retention of placenta in crossbred cattle. Serum glucose and cholesterol level were significantly higher whereas there was non significant higher protein level was observed in non ROP ,as compared to ROP cows

**KEYWORDS:** Blood-biochemical profile, Retention of placenta, Parturition

### INTRODUCTION

Retained foetal membrane is one of the most common disorders affecting reproduction of dairy cattle (Stephen, 2008). It has direct adverse effect on milk production and calf-crop. The main causes of Retention of placenta (ROP) are premature birth, nutritional deficiency, hormonal insufficiency and infection with pathogenic organisms. Estimation of certain biochemical parameters at parturition are of great diagnostic importance. These parameters will be helpful for predicting its occurrence of ROP, moreover; prophylactic measures could be instituted for its prevention.

### MATERIALS AND METHODS

In the present study, crossbred cattle reared under homogeneous managemental conditions were selected from local khatalis in and around Patna. A total 20 crossbred cattle (10 having normal expulsion of placenta which served as control and 10 having retention of placenta ) were selected in the present study. Approximately 15ml blood sample was collected from ROP and non-ROP crossbred cattle at the time of parturition (0th hours) and at 12th hours after parturition and serum was separated and was stored in deep freezer at -20<sup>o</sup>C till further analysis. Estimation of serum glucose, total protein and total cholesterol was carried out by using Span diagnostic Kits (Surat). The 't-test' was used to compare the differences in means between groups, if any, using standard statistical procedure (Snedecor and Cochran, 1994).

### RESULTS AND DISCUSSIONS

Mean values of serum glucose, total protein and total cholesterol in ROP and Non-ROP crossbred cattle are presented in Table.

A significantly ( $P < 0.01$ ) lower levels of glucose and cholesterol was found in ROP as compared to Non-ROP cases at 0th and 12th hour . Similar observations were made by Hashem and Amer (2009) in cows and Thavani et al. (2012) in buffaloes with retained foetal membranes. The lower level of glucose leads to atony of uterine tissue and weak uterine contractions, causing delay in the process of parturition and might be attributing to retention of placenta (Mohanty et al. 1994). Thavani et al. (2012) also observed lower cholesterol level in cases of buffaloes with retained foetal membranes. The lower cholesterol group showed a significantly higher incidence of retained placenta than the high cholesterol group of cows. Since cholesterol is the precursor of steroid hormones, lower cholesterol levels leading to lower levels of estrogen might be the reason of retention of placenta.

The level of serum total protein was found non-significantly lower in ROP cases as compared to Non-ROP cases at 0th and 12th hour . Hashem and Amer (2009) reported that serum total protein was not different in the ROP group of cows than non-ROP group. Thavani et al. (2012) reported low serum total protein level in buffaloes with retained foetal membranes.

**Table : Mean  $\pm$  SE values of blood glucose, total protein and cholesterol in ROP and Non-ROP at 0th and 12th hours after parturition in crossbred cattle.**

Sl. No.	Parameters	Mean $\pm$ SE (0th Hour)		Mean $\pm$ SE (12th Hour)	
		ROP	NON-ROP	ROP	NON-ROP
1	Serum Glucose (mg/dl)	47.14 <sup>a</sup> $\pm$ 2.28	60.11 <sup>b</sup> $\pm$ 2.12	45.17 <sup>a</sup> $\pm$ 2.36	57.38 <sup>b</sup> $\pm$ 2.82
2	Total Protein (g/dl)	5.39 <sup>a</sup> $\pm$ 0.33	6.16 <sup>a</sup> $\pm$ 0.19	5.31 <sup>a</sup> $\pm$ 0.34	6.12 <sup>a</sup> $\pm$ 0.26
3	Total Cholesterol (mg/dl)	109.65 <sup>a</sup> $\pm$ 4.82	140.75 <sup>b</sup> $\pm$ 5.70	108.54 <sup>a</sup> $\pm$ 3.47	138.57 <sup>b</sup> $\pm$ 6.31

Mean with different superscripts (a, b) row-wise vary significantly (P<0.01).

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