**Chapter-V**

**RESULT AND DISCUSSION**

Table 1: Comparison of mean values of different blood parameters between group 1 and 2 tested with t-test

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Group** | **Mean** | **SE** | **95% CI** | **P-value** |
| **Calcium** | 1 | 8.59 | 0.59 | 7.25-9.92 | 0.45 |
| 2 | 7.88 | 0.71 | 6.28-9.47 |
| **Magnesium** | 1 | 3.04 | 0.18 | 2.64-3.44 | 0.04 |
| 2 | 4.42 | 0.63 | 3.01-5.83 |
| **Phosphorus** | 1 | 4.64 | 0.34 | 3.88-5.40 | 0.65 |
| 2 | 4.44 | 0.41 | 3.48-5.31 |
| **Total protein** | 1 | 33 | 3.37 | 25.48-40.51 | 0.58 |
| 2 | 29.72 | 4.75 | 19.13-40.31 |
| **Glucose** | 1 | 12.71 | 3.42 | 5.07-20.35 | 0.73 |
| 2 | 14.59 | 4.23 | 5.14-24.03 |
| **Cholesterol** | 1 | 132.95 | 23.99 | 79.49-186.41 | 0.90 |
| 2 | 138.07 | 33.42 | 63.59-212.55 |
| **Triglyceride** | 1 | 27.27 | 5.93 | 14.04-40.50 | 0.73 |
| 2 | 29.53 | 2.93 | 22.99-36.08 |
|  |  |  |  |  |  |

**5.1 Calcium**

There was observed a decreased level of calcium in Group 2 (7.88±0.71 mg/dl) than Group 1 (8.59±0.59 mg/dl). The decreased level of Ca++ could be a result of the impaired absorption of food metabolites from the gastrointestinal precursor, excessive losses through urine, colostrums as it was much more drained in the colostrums during excessive milking and due to insufficient mobilization from the skeleton. As the stage of lactation progresses the serum calcium level increased which corroborates with the findings of Rowlands et al, (1975) and Nale (2003). Ramakrishna (1991) recorded higher values (9.77±0.33 mg/dl) of calcium in lactating cows.



Figure 1: Boxplot showing the visual comparison of minimum, maximum and median values of calcium between group 1 and 2

**5.2 Magnesium**

Magnesium plays a vital role during the metabolism of carbohydrates, lipids, nucleic acids and proteins. In present investigation serum magnesium concentration in various groups of buffaloes did not differ significantly. However, Rao et al, (1981) recorded higher magnesium levels (3.47±0.23 mg/dl) while Gupta and Rai (1987) recorded lowered magnesium mean values.



Figure 2: Boxplot showing the visual comparison of minimum, maximum and median values of magnesium between group 1 and 2

**5.3 Phosphorus**

The serum phosphorus level in Group 1 (4.64±0.34 mg/dl) was significantly higher than the Group 2 (4.44±0.41 mg/dl). Moderate depression in the levelsof phosphorus might be due to the necessity of it forthe colostrums synthesis (Rook and Thomas, 1983)and enhanced carbohydrate metabolism.



Figure 3: Boxplot showing the visual comparison of minimum, maximum and median values of phosphorus between group 1 and 2

**5.4 Total Proteins**

 In Group 1 animals, the serum total protein value (33.0±3.37 mg/dl) was elevated than Group 2 (29.72±4.75 mg/dl). Kulkarni et al, (1983) recorded lowered concentration of total proteins than the recorded in present investigation. Higher serum total protein concentration might have been associated with infectious processes i.e. mastitis, metritis or have had improved because of dietary intake of concentrates. Total protein contents usually used as an appraisal of nutritive status of an animal reflecting food intake and metabolism. This increase in total protein concentration following parturition might be attributed to the haemoconcentration and water losses occurred following parturition.



Figure 4: Boxplot showing the visual comparison of minimum, maximum and median values of total protein between group 1 and 2

**5.5 Glucose**

The glucose level is regarded as one of the indicators of energy status in ruminants. The blood glucose was significantly higher in Group 2 animal (14.59±4.23 mg/dl) than the Group 1 (12.71±3.42 mg/dl). The lowered level of blood glucose concentrations in early stage of lactation might be due to large amount of blood glucose withdrawal by the mammary gland for the synthesis of milk lactose (Schultz, 1968). The hypoglycemia after parturition was attributed to heavy drain of glucose for lactose synthesis (Nale, 2003).



Figure 5: Boxplot showing the visual comparison of minimum, maximum and median values of glucose between group 1 and 2

**5.6 Cholesterol**

In Group 2 animals, the serum cholesterol value (138.07±33.42 mg/dl) was higher than Group 1 (132.95±33.99 mg/dl). The descending trend in the serum cholesterol concentration in dry pregnant buffaloes compared to lactating buffaloes was observed (Nath et al, 2005). The serum total cholesterol concentration was minimum following calving and got build up as the lactation progresses (Rowlands et al, 1990). The higher level of cholesterol with advancement of lactation was a physiological adjustment to meet the lactation requirements. The hormonal level of estrogen along with thyroxin played a vital role in reducing the cholesterol levels during pregnancy.



Figure 6: Boxplot showing the visual comparison of minimum, maximum and median values of cholesterol between group 1 and 2

**5.7 Triglyceride**

In Group 2 animal the serum Triglyceride values (29.53±2.93 mg/dl) was elevated than Group 1 (27.27±5.93 mg/dl). Elevations in triglycerides can be caused by an inherited disorder, another health condition, adverse effects of medications, or a combination of these factors. In day-to-day practice, secondary causes of high triglycerides are far more common than inherited disorders. Hypertriglyceridemia is responsible for the development of coronary heart disease and other atherosclerotic diseases.



Figure 7: Boxplot showing the visual comparison of minimum, maximum and median values of triglyceride between group 1 and 2