Evaluation of energy related blood metabolites and its relation to blood copper status of ghezel ewes in late pregnancy

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Abstract

Pregnancy toxemia is one of the most important and common metabolic disorders of pregnant ewes in late pregnancy. Metabolic profiles and serum biochemical parameters have been used to predict, control and monitoring of the pregnancy toxemia. So the aim of the study was to observe the changes in energy-related blood metabolites and blood lipid profile in correlation with blood copper status of late pregnant Ghezel ewes. In the present study the variations of lipids and energy-related blood metabolites and their correlations with serum copper status for a period of 21, 14, 7 days before parturition and the day at parturition, were described. Blood samples were taken to determine Glucose, β-Hydroxybutyrate (BHB), Non-Esterified Fatty Acids (NEFA), Triglyceride, Cholesterol, High-Density Lipoprotein (HLD), Total Protein, Albumin, Blood Urea Nitrogen (BUN), Copper, Aspartate Aminotransferase (AST) and Alkaline Phosphatase (ALP). BHBA, NEFA, HDL and Cholesterol showed a significant increase during the last three weeks of pregnancy. No marked change was detected in copper level during different stages of sampling. In the current study, we did not observe any significant correlations between serum copper status and cholesterol, HDL, glucose, NEFA and BHBA. Further studies are needed to evaluate the animal response to different levels of copper supplementation in a situation with negative energy balance like a status occured in late pregnancy.

Key words: Pregnancy Toxemia, Blood, Lipid, Copper, Ghezel Ewes

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