HEMATOLOGY AND OXIDATIVE STRESS VALUES DURING THE FIRST TRIMESTER OF PREGNANCY IN DAIRY CATTLE

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The determination of normal values of hematological and blood biochemical values are important for the clinical interpretation of laboratory data. Pregnancy is one of the physiological conditions leading to remarkable and dramatic changes in hematological and biochemical variables in all animal species. The present study is aimed at determining the values of some hematological and oxidative stress parameters during the first trimester of pregnancy in cow. A total of 91 non-pregnant and pregnant females (21 and 70, respectively) with mixed age and parity were used in this study. Blood samples were collected from coccygeal vessels containing EDTA for hematology analysis. Plasma was obtained by centrifugation (1,500 g for 15 min) immediately after collection and was stored at -20°C until biochemical analysis. Average mean Total Leukocyte Count (TLC), Packed Cell Volume (PCV), Total Erythrocyte Count (TEC), Platelet Mass (PM), Hemoglobin (Hb), Mean Corpuscular Volume (MCV), Mean Corpuscular Hemoglobin Concentration (MCHC), and were determined using the automat. The oxidative stress was assessed by measuring plasma Thiobarbituric Acid Reactive Substances (TBARS) and Total Antioxidant Status (TAS) according to the method described previously. The values recorded differed significantly in the non-pregnant and in the pregnant females during the first trimester of pregnancy (P ≤ 0.05). The mean values of TLC, Hb, PCV and PM were significantly lower in pregnant females than non-pregnant bovine females. The value of TEC was lighter high in the pregnant females than the control group (7.53±1.54 and 7.04±1.27 10^6 µL, respectively). The mean value of TBARS and total TAS were higher in pregnant bovine females than in control group. The data presented in this study can be used as a baseline to study the hematological and biochemistry alterations due to physiology status.

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