POLYMORPHONUCLEAR LEUKOCYTES PHAGOCYTOSIS IN BOVINE LEUKEMIA VIRUS DAIRY INFECTED COWS

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The aim of the present study was to evaluate the phagocytosis of propidium iodide-labeled Staphylococcus aureus (SaPI) and Escherichia coli (ECPI) by granulocytes of bovine leukemia virus (BLV) infected dairy cows with distinct lymphocyte profile known as alymphocytotic (AL) and persistent lymphocytosis (LP). Thus, 100 Holstein cows were sera tested by agar gel immunodiffusion (AGID) and enzyme-linked immunoabsorbent-assay (ELISA) using the glycoprotein gp51, 72 days before and at the day of the assays. From these animals, 15 animals were selected and divided uniformly in three groups (negative, AL, LP). Thus, 100 µL of whole blood were incubated with 100 µL of Staphylococcus aureus (ATCC 25923) or Escherichia coli (O98:H28), at the concentration of 2.4x10⁹ colony forming units per milliliter, and 900 µL of phosphate-buffer saline (PBS) for 30 minutes at 37 °C. The samples were analyzed by flow cytometry where at least 20,000 polymorphonuclear leukocytes (PMNL) based on their cell size and granularity characteristics were acquired. The Flow Jo Tree Star software was used to analyze the data. The results of the sera test showed 25 % and 87 % of positive animals in the AGID and ELISA tests, correspondingly. The percentage of PMNL that phagocytosed Staphylococcus aureus were 59.12% (±12.30), 48.16% (±12.50) and 59.83% (±6.47) (P = 0.12) and Escherichia coli 30.13% (±11.42), 24.02% (±6.71) and 32.70% (±7.45) (P = 0.53) in negative, AL and LP animals, correspondingly. The numbers of bacteria phagocytosed by each PMNL given by an arbitrary value recognized as phagocytosis intensity were 61.55 (±17.47), 41.22 (±17.47) and 58.77 (±18.36) (P = 0.16) for Staphylococcus aureus, and 21.60 (±11.42), 17.86 (±11.11) and 21.53 (±9.19) (P = 0.82) for Escherichia coli in negative, AL and LP cows, respectively. Thus, PMNL phagocytosis appears not to be affected by BLV infection.