

## **Abstract**

Enzootic Bovine Leukosis (EBL) is the most important neoplastic disease in cattle. Changes in the levels of the tumor markers IL-2, CA-125, B2M, and LDH appear to play a significant role as novel indicators in the pathophysiology and severity of this disease. In this study, blood samples were collected from 78 dairy cows and sent to the clinical pathology laboratory in EDTA-containing tubes as well as gel tubes. The study cows were divided into two groups, positive (18 heads) and negative (60 heads), based on the results of the Bovine Enzootic Leukosis Virus serologic test and PCR assay. Complete Blood Count (CBC) results, including the total leukocyte count and differential count, were recorded. The activity levels of the tumor markers IL-2, CA-125, B2M, and the enzyme LDH were measured using specific kits and the ELISA test. The results of this study showed that in seropositive cattle with leukosis, the values of the tumor markers IL-2, CA-125, B2M, and the enzyme LDH were significantly increased compared to seronegative cows ( $P<0.05$ ). Based on the white blood cell count and lymphocyte count, seropositive cattle for leukosis were categorized into two groups: those with overt lymphocytosis and those without lymphocytosis. In the latter group, it was shown that with an increase in the number of lymphocytes, the values of IL-2, CA-125, B2M, and the activity of the enzyme LDH significantly increased ( $P<0.05$ ). The findings of this study suggest that the increased activity of the enzyme LDH and the tumor markers IL-2, CA-125, and B2M may be associated with the proliferation and spread of cancerous lymphocytes.

**Keywords:** Interleukin-2, Cancer Antigen 125, Beta-2 Microglobulin, Lactate Dehydrogenase, Enzootic Leukosis, Cattle