EVALUATION OF SALIVARY ENZYME ACTIVITIES AS BIOMARKERS FOR DIAGNOSIS AND THERAPY MONITORING IN DOGS WITH SEPSIS

Zeki YILMAZ*,
Ebru YALCIN,
Huseyin CIHAN,
Meric KOCATURK,
Merve TURAL,
Pinar LEVENT,
Ahmet SARIL

* Department of Internal Medicine, Faculty of Veterinary Medicine, Uludag University, Bursa Turkey

zyilmaz@uludag.edu.tr

Introduction
Sepsis is defined as the presence of systemic inflammatory response syndrome (SIRS) with a documented or presumed infection. Canine parvovirus (CPV) infection is considered as a model of sepsis in dogs. In human and veterinary medicine, new diagnostic and prognostic biomarkers for sepsis are needed. Salivary enzyme activities are considered as an alternative way for these purposes.

The present study was aimed to investigate the activity of alkaline phosphatase (ALP), alanine aminotransferase (ALT) and amylase in the saliva collected before and after treatment from dogs with sepsis.

Material and Method
Test group were consisted of totally 30 dogs with sepsis due to the presence of SIRS and confirmed CPV infection. Age and breed matching dogs to test group were used as healthy controls (n=10). The un-stimulated saliva of the patient was collected in a sterile test tube, before and after treatment, and analyzed by using the Automatic Analyzer.

Results
The obtained results showed statistically significant ($P<0.05$) increased activity of ALP (497 ± 87 IU) and amylase (128 ± 44 IU) in the saliva from dogs with sepsis, in relation to the control group (151 ± 47 IU and 34 ± 15 IU, respectively). Salivary ALT activity (56 ± 10 IU) in septic dogs was lower ($P<0.001$) than that of healthy controls (231± 43 IU). In dogs with sepsis, saliva ALP, ALT and amylase activities before treatment decreased slightly at 3 days after the treatments. There were no significant correlation on enzyme activities between saliva and serum.

Conclusion
These results showed that the salivary enzymes (ALP, ALT, and amylase) could be considered as biochemical markers for distinguishing between healthy and diseased status (sepsis), but not in the evaluation of the therapeutic feedbacks in septic dogs.

This study was supported by The Scientific and Technological Research Council of Turkey (TOVAG-114R016)

Keywords: Saliva, ALP, ALT, amylase, sepsis, dogs