RESEARCH AWARD: VAN FOREEST AWARD

Oya ERALP INAN, Assist. Prof.,
Meric KOCATURK PhD,
Pinar LEVENT PhD student,
Zeki YILMAZ Prof.Dr.

Medical and Surgical Laboratory Animal Practice and Research Center,
Osmangazi University,
26480 Eskisehir
Turkey

oeralp@ogu.edu.tr

PROTECTIVE EFFECTS OF S – ADENOSYLMETHIONINE AND SILYBIN ON HEPATORENAL AND HEMOSTATIC FUNCTIONS IN DOGS WITH EXPERIMENTAL ENDOTOXEMIA

Most common complications of sepsis are hepatorenal injury and coagulation abnormalities such as disseminated intravascular coagulation (DIC) with substantial morbidity and mortality.[1-3] Experimental intravenous administrations of endotoxin (lipopolysaccharide – LPS) in dogs have been done to emulate sepsis.[2,4] Thromboelastography (TEG) evaluates the changes in viscoelastic properties of whole blood from initial clot formation through fibrinolysis. Although recent studies showed that S – adenosylmethionine (SAMe) and Silybin could prevent liver injury in different clinical conditions (toxin and alcohol induced hepatopathy), there is no data on the therapeutic and prophylactic effects of SAMe and Sibylin in patients with sepsis/endotoxemia.[5] Thus, our aim was to investigate protective effects of SAMe and sylbin treatment on hepatorenal and hemostatic functions in experimental model of canine endotoxemia.

Healthy dogs (n=20) were divided equally into 4 groups, as control, SAMe+sylibin (SS), LPS, and LPS+SS. Controls received 0.9% NaCl intravenously. Dogs were treated daily with 20mg SAMe and 1mg Silybin per kg body weight in SS and LPS+SS. LPS was injected once (2 µg/kg/i.v.) to dogs in LPS and LPS+SS. Hemostatic functions were assessed by TEG.

LPS induced clinical and hematological changes such as tachycardia, tachypnea and leucopenia were attenuated ($p<0.05$) by SS treatment. Serum blood urea nitrogen and creatinin increased at 1-24 hrs ($p<0.05$) after LPS. They didn't changed in LPS+SS. LPS associated increases in liver enzymes were inhibited at 1-24 hrs in LPS+SS. TEG measurements: reaction time, coagulation time and α-angle, but not maximum amplitude and G values, were significantly changed after LPS injection. These responses were restored by SS treatment.

SS administration may be beneficial by regulating coagulation and protecting hepatorenal function in dogs with endotoxemia.

Keywords: SAMe, silybin, endotoxemia, thromboelastography, dogs

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