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## THROMBOELASTOGRAPHIC EVALUATION OF THROMBUS GENERATION AND FIBRINOLYSIS IN DOGS WITH PARVOVIRAL ENTERITIS

### Introduction

Canine parvovirus (CPV) infection causes significant morbidity and mortality due to sepsis and multi-organ failure including coagulation abnormality in dogs. Thromboelastography (TEG) is used to evaluate global coagulation status. TEG velocity curve (V-curve) data provides further information of thrombus generation and fibrinolytic activity, but there is no data yet in septic patients. The present study investigated the global coagulation status with V-curve data by TEG in dogs with sepsis due to CPV infection.

### Material and Methods

Test group included CPV-infected dogs (n=21), and 10 dogs were used as healthy controls. Coagulation status was evaluated with Na citrated whole blood samples by using kaolin-activated TEG. Clotting time (reaction time[R]), clot kinetic (kinetic time[K] and  $\alpha$ -angle), clot strength (maximum amplitude[MA], G-value) and clot stability (LY30) were evaluated. V-curve data included the parameters of thrombus generation; maximum rate of thrombus generation (MRTG), time to maximum rate of thrombus generation (TMRTG) and total thrombus generated (TG), and fibrinolytic activity; maximum rate of lysis (MRL), time to maximum rate of lysis (TMRL) and total lysis (TL).

### Results

Dogs with CPV infection were consisted with sepsis criteria. Mean R and K times,  $\alpha$ -angle, G and LY30 values were higher in dogs with CPV, compared to controls ( $P < 0.05 - 0.01$ ). TMRTG ( $5.2 \pm 0.4$ min) and MRTG times ( $21.1 \pm 2.0$ min.) in dogs with CPV were higher ( $P < 0.01$ ) than the control values ( $2.0 \pm 0.4$ min. and  $14.8 \pm 2.4$  min., respectively). There was no statistical difference on TG value between groups. MRL, TMRL, and TL values were  $0.19 \pm 0.00$ mm/min. ( $P < 0.05$ ),  $34.03 \pm 2.16$ min. ( $P < 0.05$ ), and  $111 \pm 10$ mm ( $P < 0.01$ ) in dogs with CPV, and  $0.28 \pm 0.05$ mm/min.,  $43.86 \pm 1.67$ min., and  $173 \pm 10$ mm in control dogs.

### Conclusion

TEG results showed that clotting time and clot kinetic, strength and stability were altered during CPV infection in dogs. V-curve data from dogs with sepsis due to CPV infection might also be used to indicate the presence of hypercoagulation states.

*Keywords:* TEG, PVE, sepsis, dogs