Proceedings of the
8th International Symposium
on Canine and Feline Reproduction
ISCFR

June 22-25, 2016
Paris, France

In a joint meeting with the XIX EVSSAR Congress

Reprinted in IVIS with the permission of the ISCFR Organizers
Evaluation of serum canine prostatic specific esterase (CPSE) in dogs with subclinical and clinical benign prostatic hyperplasia (BPH)

S. Ponglowhapan, K. Mankong, J. Suwimonteerabutr
Department of Obstetrics, Gynaecology and Reproduction, Faculty of Veterinary Sciences, Chulalongkorn University, Bangkok, Thailand.
sponglowhapan@gmail.com

The canine prostatic specific esterase (CPSE) is a protein synthesized and secreted by epithelial cells of the prostate. Recently, ELISA test for serum CPSE has been commercially available in order to help diagnose canine benign prostatic hyperplasia (BPH). Our previous study [1] clearly demonstrated significant impacts of prostatic volume (PV) and body weight (BW) on serum CPSE levels in healthy adult dogs without BPH; serum CPSE was significantly highest in small compared to medium and large dogs, suggesting that BW must be considered for clinical interpretation of CPSE [1]. Because BPH can be asymptomatic (subclinical) or symptomatic (clinical) depending on size of the enlarged prostate [2], the objective of the present study was to investigate if CPSE levels differed between subclinical and clinical BPH dogs. Clinical signs related to BPH were recorded. General physical and prostate examination including digital rectal palpation and transabdominal ultrasound scan were performed. The length (L), width (W) and dorsoventral diameter (D) of the prostates were measured. The actual prostatic volume (PV = [(L×W×D)/2.6] +1.8) [3] and the estimated normal-sized prostate (PV = [0.33 × BW (kg)] + 3.28) [4] were calculated and compared. Dogs having actual PV greater than estimated normal volume of a given BW were considered BPH. Due to the effect of BW on serum CPSE concentrations, dogs were divided into 3 groups; small (1-10 kg), medium (>10-20 kg), and large dogs (> 20 kg). Blood samples were collected and serum CPSE concentrations were measured in duplicate using Odelis® test kit (Virbac Animal Health, Suffolk, UK) with the sensitivity of 97.1% and specificity of 92.7%. Data were statistically analyzed using ANOVA. The CPSE value (ng/mL) was present as mean ± SEM. CPSE levels were compared between normal intact, subclinical BPH and clinical BPH dogs. The results showed that, in small dogs, serum CPSE was lowest in normal dogs (38.57±8.03, n=26) compared to subclinical BPH (72.58±6.92, n=35) (p=0.04) and clinical BPH (132.15±11.81, n=12) (p<0.0001). In medium dogs, CPSE was lowest in normal dogs (26.13±10.54, n=15) compared to subclinical BPH (98.74±7.35, n=31) (p<0.0001) and clinical BPH (109.86±16.71, n=6) (p=0.0012). In large dogs, CPSE was lowest in normal dogs (15.42±8.73, n=22) compared to subclinical BPH (33.51±9.39, n=19) (p>0.05) and clinical BPH (157.20±23.63, n=6) (p<0.0001). However, differences in CPSE levels between subclinical BPH and clinical BPH were found in small (p=0.0008) and large dogs (p<0.0001). In conclusion, our findings revealed clinical relevance of serum CPSE in differentiating normal and clinical BPH dogs of all BW groups. Measurement of CPSE levels could differentiate subclinical and clinical BPH in small- and large-sized dogs, but not medium-sized dogs.