

We conclude that concurrent adrenal and pituitary lesions are present mainly in dogs with non-suppressible hypercortisolism. Results of this study show that CT evaluation of both the pituitary and the adrenal glands should always be included in the diagnostic work-up of dogs with hypercortisolism to provide optimal treatment and prognosis.

**Disclosures:** No disclosures to report.

#### ESVE – P – 11

**PREVALENCE OF NEUROLOGICAL SIGNS IN HYPOTHYROID DOGS AT DIAGNOSIS.** S. González Sanz<sup>1</sup>, R. García del Real Torralva<sup>1</sup>, P. García San José<sup>1</sup>, I. Clares Moral<sup>1</sup>, P. Casals Canal<sup>1</sup>, M.D. Pérez Alenza<sup>2</sup>. <sup>1</sup>Hospital Veterinario Complutense, Madrid, Spain, <sup>2</sup>Departamento de Medicina y Cirugía Animal, Universidad Complutense, Spain

Neurological signs (NS) can occur in canine hypothyroidism and sometimes, they are the unique manifestation of this disease. The objective of the present retrospective study was to evaluate the frequency of NS, including seizures, among hypothyroid dogs at diagnosis. Fifty-nine dogs newly diagnosed with hypothyroidism at The Veterinary Teaching Hospital Complutense Madrid between October 2011 and March 2017 were reviewed.

Age ranged between 2.3 and 6.5 years, 24/59 females, 37/59 males, 29/59 intact and 30/59 neutered. Duration of clinical signs before diagnosis ranged from 1 to 24 months (mean  $9 \pm 6.7$  months). Clinical signs, body condition score (BCS), concurrent diseases, body weight, total-thyroxine (tT4), free-thyroxine (fT4), thyroid stimulating hormone (TSH) and cholesterol levels were recorded.

Neurological signs were present in 17/59 dogs (29%), being seizures the most common (13/17), while 4/17 dogs presented other NS (vestibular deficits, megaesophagus, head bobbing syndrome and peripheral neuropathies).

No association was observed between seizures and age, sex, BCS, duration of signs before diagnoses, tT4 and fT4 levels, reproductive status or other NS.

Mean plasma TSH in dogs without seizures ( $2.0 \pm 1.7$  ng/mL) was significantly higher than in dogs without this NS ( $1.3 \pm 2.2$  ng/mL) ( $P = 0.04$ ). Among the 13 dogs that presented seizures, 7/13 (54%) had normocholesterolemia and 6/13 (46%) hypercholesterolemia; including one dog (8%) with plasma cholesterol levels above 620 mg/dL. However, in the group of dogs without seizures, only 4/29 (14%) presented normal cholesterol levels and 25/29 (85%) hypercholesterolemia, including 12/29 (41%) with plasma cholesterol levels above 620 mg/dL of ( $P = 0.01$ ).

Prevalence of seizures at diagnosis was higher in dogs with clinical evidence of myxedema (4/9; 44%) compared with dogs without this clinical sign (9/50; 18%) ( $P = 0.078$ ).

Neurological signs have been described to occur in 7.5% of hypothyroid dogs. However, in the present study, 29% of hypothyroid dogs had NS, and among them, 76.5% presented seizures. Probably, our diagnostic protocol used for convulsive patients, were thyroid hormones testing is always included before anticonvulsive treatment is administered, is related with this finding. Different mechanisms have been proposed to explain the development of NS in hypothyroid dogs, including alterations in axonal transport and ischemia. Hypercholesterolemia and atherosclerosis and consequent hypoxia of Central Nervous System has been observed and proposed as a cause of NS; however, in the present study hypercholesterolemia is definitely not related to seizures. Clinical evidence of myxedema though seems to be related with seizures.

**Disclosures:** No disclosures to report.

#### ESVE – P – 12

**EVALUATION OF ONE PORTABLE BLOOD GLUCOSE METER AND ONE PORTABLE GLUCOSE-KETONES METER IN DOGS.** F. del Baldo, E. Malerba, S. Corradini, I. Rovatti, A. Zeppi, F. Dondi, F. Fracassi. University of Bologna, Ozzano Dell'Emilia, Italy

Nowadays only few Portable Blood Glucose Meters (PBGMs) have been developed specifically for use in dogs and cats. Recently one glucometer (Gluco Calea, WellionVet; GC) and one glucose-ketones meter (Belua, WellionVet; BE) have been developed for use in veterinary medicine. The aims of this study were to assess the accuracy and precision of these devices in canine venous and capillary blood samples based on ISO 15197:2013 and to evaluate packed cell volume (PCV) interferences.

Samples were obtained from 45 non anemic dogs (PCV 37–54%) and 10 anemic dogs (PCV <37%) divided into three glycemic ranges: high (>140 mg/dL), medium (90–139 mg/dL), and low (<90 mg/dL). Paired measurements of glucose and 3- $\alpha$ -hydroxybutyrate (3-HB) from capillary and venous blood samples were determined using the two devices and compared with the results of reference methods (enzymatic hexokinase and 3-HB-dehydrogenase, respectively) obtained by an automated chemistry analyzer (Beckman-Coulter AU480). Linear regression, Bland Altman plots and the Parkes error grid analysis (EG) were used to assess the accuracy. PCV interferences for glucose measurement were assessed comparing the differences between PBGMs readings and reference method values in anemic and non-anemic dogs. To assess within-run precision, glucose concentrations obtained from 12 samples, belonging to the three glycemic ranges, were measured 10 times within 10 min. Between-day precision was assessed by testing each manufacturer's glucose control solution over 10 consecutive days.  $P < 0.05$  was considered significant.

Mean differences (mg/dL) between measurements of each PBGM on capillary and venous blood and values measured by the reference method were: GC  $37.8 \pm 24.2$ ,  $44.1 \pm 27.2$ , BE  $20.4 \pm 28.6$  and  $10.2 \pm 25.1$  respectively. A positive significant correlation between all paired samples was found for both devices ( $r > 0.89$ ). However neither PBGMs fulfilled ISO requirements: 82.21% and 84.08% of glucose values measured respectively on capillary and venous blood using GC fell in zone A+B of EG; 86.7% and 97.8% of glucose values measured respectively on capillary and venous blood by BE fell in zone A+B of EG. Within-run and between-day precision were adequate. The effect of PCV was significant and higher results with lower PCV were observed.

The correlations between capillary and venous 3-HB and reference 3-HB were  $r = 0.48$  and  $r = 0.59$ , respectively. Mean differences between capillary and venous 3-HB and reference method were  $0.05 (\pm 0.57)$  and  $-0.07 (\pm 0.79)$  respectively; within-run precision was adequate.

Our results show that both GC and BE are not sufficiently accurate and safe for clinical use in dogs.

**Disclosures:** Disclosures to report.

Devices and test strips were provided by manufacturers (WellionVet).

#### ESVE – P – 13

**SERUM SYMMETRIC DIMETHYLARGININE (SDMA) IN DOGS WITH HYPOTHYROIDISM.** G. Carotenuto, S. Corradini, A. di Paola, F. Dondi, F. Fracassi. University of Bologna, Ozzano Dell'Emilia, Italy

Canine hypothyroidism is associated with decreased glomerular filtration rate (GFR), while serum creatinine (SCr) concentrations are rarely increased above the reference interval (RI) in hypothyroid dogs. Symmetric dimethylarginine (SDMA) is considered a biomarker for early detection of renal dysfunction and resulted strongly correlated with GFR in dogs. In humans, SDMA is significantly higher in hypothyroid compared to healthy people. The aim of this study was to evaluate the SDMA concentrations in a population of hypothyroid dogs (HD) at the time of diagnosis (T0) and after treatment (T1). Fourteen dogs affected by spontaneous hypothyroidism and 20 healthy dogs (control group) were included. The diagnosis of hypothyroidism was based on consistent clinical signs, laboratory findings, including serum total T4