and cTSH concentrations below and above the RI, respectively. In dogs with normal cTSH, rhTSH stimulation test was performed to confirm the diagnosis. SCr was measured for diagnostic or check-up purposes and SDMA was measured afterwards from surplus of serum stored at −20°C. In HD such measurements where performed at T0 after 15 to 112 days (median 64.5) of treatment (T1) with levothyroxine (10–15 µg/kg q12 h PO). SDMA was measured using a validated immunoassay (IDEXX SDMA test).HD had a median age of 4 years (4–15), median body weight (BW) of 37.5 kg (7.9–53), 7/14 were male (1 castrated) and 7/14 female (3 spayed). There were no significant differences regarding signalment and BW between HD and control group. Median SDMA concentrations (RI <14 µg/dL) were 10 µg/dL (6–17), 13.5 µg/dL (7–20) and 10.5 µg/dL (5–17) in healthy dogs, HD at T0 and T1, respectively. SDMA concentrations were significantly higher in HD at T0 in comparison with healthy dogs ($P < 0.029$) and HD at T1 ($P < 0.031$). Among HD, 7/14 had SDMA above the RI at T0 and only 1/14 (7%) at T1. At T0, 4/14 HD had SCr above the RI (>1.35 mg/dL). SCr concentration was significantly higher in HD at T0 compared to HD at T1 ($P < 0.0082$), and in one dog SCr was above the RI at T1. No significant correlation was observed between SDMA and T4, and SDMA and SCr in the HD at T0 and T1.

This study shows that in HD SDMA concentrations are frequently above the RI at diagnosis and normalize after treatment. The GFR modifications that are present in canine hypothyroidism may be better detected with SDMA compared to SCr.

Disclosures: No disclosures to report.

ESVE – P – 14

EVALUATION OF ONE PORTABLE BLOOD GLUCOSE METER AND ONE PORTABLE GLUCOSE-KETONES METER IN CATS.

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Numerous portable blood glucose meters (PBGMs) have been developed during the last decade, the majority of which is designed for use in humans. 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 feline venous and capillary blood samples based on ISO 15197:2013 and to evaluate packed cell volume (PCV) interferences.

Samples were obtained from 29 non anemic cats (PCV 30–47%) and 18 anemic cats (PCV<30%) 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-á°ż-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 cats. To assess within-run precision, glucose concentrations obtained from 14 samples, belonging to the three glycemic ranges, were measured 10 times within 10 minutes. 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 30.7 ± 35.4, $35.6.2 \pm 40.5$, BE 15.5 ± 35.5 and 15.0 ± 24.1 respectively. A positive significant correlation between all paired samples was found for both devices ($r > 0.89$). However neither PBGMs totally fulfilled ISO requirements, but 100% of glucose values measured on venous blood using BE fell in zone A+B of EG. Within-run and between-day precision were adequate. The effect of PCV was significant (higher results with lower PCV) only for BE.

The correlations between capillary and venous 3-HB and reference 3-HB were $r = 0.66$ and $r = 0.82$ respectively. Mean differences between capillary and venous 3-HB and reference method were −0.07 (±1.15) and −0.30 (±1.48) respectively; within-run precision was adequate.

Our results show that GC is not sufficiently accurate while the superior performances of BE supports its clinical use in cats.

Disclosures: Disclosures to report.

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

ESVIM – P – 1

BRONCHOALVEOLAR LAVAGE ANALYSIS USING UREA DILUTION STANDARDIZATION IN DIAGNOSIS OF RESPIRATORY DISEASES IN DOGS.

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Considerable variation has been reported in total cell counts and concentration of biochemical markers due to variable recovery of pulmonary epithelial lining fluid (PELF) in bronchoalveolar lavage (BAL) fluid. A number of chronic respiratory conditions can be difficult to diagnose definitively and accounting for dilution of PELF may allow us to better differentiate respiratory disease. Differentiation of various chronic respiratory diseases may be made via analysis of BAL fluid using urea concentration of BAL relative to blood urea concentration as a marker of dilution of PELF. Assessment of cell counts after adjusting for dilution may allow differentiation of the primary disease process in dogs presenting with respiratory signs.

Client-owned dogs presenting for investigation of respiratory disease were included. All dogs had a BAL performed and BAL cell counts were corrected after using urea as a marker for dilution and comparison of urea in blood to that of urea in BAL fluid. A final diagnosis of respiratory disease was made after retrospective analysis of all diagnostic investigations and response to treatment.

Seventy two BAL samples from a total of 48 dogs were analyzed and thirteen primary causes of respiratory disease identified based on diagnostic investigation including BAL cell cytology and treatment response. Respiratory diseases were also assigned to inflammatory, non-infectious, infectious, upper respiratory tract or respiratory neoplasia categories based on the disease diagnosed. There was no statistical difference in the adjusted total cell counts of BAL fluid (BALF) from dogs with different respiratory diseases or disease groups. *Mycoplasma* spp had no effect on the total cell count in dogs with chronic bronchitis.

This study suggests total cell counts of BAL fluid corrected for dilution by urea concentration cannot be used to distinguish between different respiratory diseases. A larger number of cases and cross section of respiratory disease may further identify significant differences in total and differential cell counts of various different diseases.

Disclosures: This study was funded by the Australian Companion Animal Health Foundation and supported by the Australian and New Zealand College of Veterinary Scientists Research Grant Amanda Paul and Jason Stayt also indicate that they have no affiliations or financial involvement with any organization or entity with a financial interest in, or in financial competition with, the subject matter or materials discussed in this article. Caroline Mansfield has funding for research provided by Australian Research Council, Canine Research Foundation (Australian Kennel Club), Comparative Gastroenterology Society, NexVet Biologics, PlasVac, Blackmores, Hills Pet Nutrition. She is also provided an Honoraria for travel/speaking in 2017 provided by Nestle Purina, FSAVA. Peter Irwin has funding from the Australian Research Council, Canine Research Fund and Australian Companion Health Foundation for ongoing research projects.