Oral presentations

What can sway SDMA? A retrospective analysis of the influence of renal and non-renal factors on symmetric dimethylarginine (SDMA) concentration in cats and dogs

**Peter Coss¹, Marta Costa²,
Sophie Adamantos², Natalie Finch³**

- 1 Bristol Veterinary School, University of Bristol, Bristol, United Kingdom
- 2 Langford Vets, University of Bristol, Bristol, United Kingdom
- 3 Bristol Renal, University of Bristol, Bristol, United Kingdom

OBJECTIVES

To explore the influence of renal and non-renal factors on symmetric dimethylarginine (SDMA) concentration in cats and dogs.

METHODS

Clinical data from patients presenting to a University referral hospital, between April 2016 and August 2017

in which SDMA was measured, was retrospectively analysed. Renal disease was based on clinical findings (physical examination, biochemistry, urinalysis and imaging). Increased SDMA was defined as the upper limit of the laboratory reference interval (14 µg/dl). Proportions of patients with increased SDMA were compared between renal and non-renal disease groups using Chi-squared testing. In renal patients, SDMA was compared between categorised variables using the T test and a multivariable linear regression model was constructed to identify independent predictors of SDMA.

RESULTS

Twenty-one cats and 12 dogs were included. There was no significant difference in the proportion of patients with increased SDMA between those with (13/21, 62%) and without (5/12, 42%) renal disease ($P=0.300$). Only 4/11 (36%) IRIS stage 1 patients had increased SDMA compared to 8/9 (89%) IRIS stage 2 patients and 1/1 (100%) with acute kidney injury. Patients with weight loss had significantly lower SDMA than patients without ($P=0.031$). In the multivariable regression model, creatinine was a positive ($\beta=0.413$, $P=0.038$) and history of weight loss a negative ($\beta=-0.434$, $P=0.030$) predictor of SDMA (model R^2 0.392). These were independent of signalment, weight, condition score and other disease factors.

STATEMENT (CONCLUSIONS)

This study suggests that many IRIS stage 1 patients do not have increased SDMA and that weight loss has a negative influence on SDMA.

The prevalence of radiographic evidence of urolithiasis in cats presented to a veterinary hospital

**Andrea Galliano^{1,2}, Gawain Hammond²,
Alix McBrearty², Anna Beber²,
Gerard McLauchlan¹**

- 1 Fitzpatrick Referral Soft Tissue and Oncology, Guildford, United Kingdom
- 2 Glasgow University, Glasgow, United Kingdom

OBJECTIVES

To determine the prevalence and location of mineralised radiopacities within the urinary tract of a population of cats.

METHODS

All cats presented between 2011 and 2015 with at least one diagnostic abdominal radiograph of the entire urinary tract were eligible for inclusion. Fourteen cases in which the only available radiographs showed urinary catheters, stents or subcutaneous ureteral bypass devices were excluded. Radiographs were reviewed by one specialist in diagnostic imaging for mineralized opacities (uroliths) within the urinary tract. Their number, location and size were recorded. Presenting signs and serum calcium results of cats with uroliths were also reviewed.

RESULTS

Two hundred and four cats were included.

Thirty seven cats (18%) had at least one urolith. Thirteen cats had one urolith, 9 had two to five and 15 had more than five. Uroliths were identified in multiple locations in 15 cats. Nephroliths were identified in 19 cats, ureteroliths in 9, cystoliths in 19 and urethral calculi in 4. The uroliths were <1 mm in 10 cats, between 1 and 2 mm in 20 cats and >3 mm in 7 cats.

Of the 37 cats with uroliths, 11 (30%) presented with specific signs of urinary tract disease (e.g. haematuria, pollakiuria, stranguria) and 27 had concurrent biochemistry results available for review. Four of these (15%) had increased serum total calcium.

STATEMENT (CONCLUSIONS)

The prevalence of mineralised uroliths in this population of cats was 18%. More upper urinary tract stones than lower urinary tract stones were detected.

Ultrasonographic findings in cats with acute kidney injury: a retrospective study

Laura Cole¹, Panagiotis Mantis²,
Karen Humm¹

¹ Royal Veterinary College, London, United Kingdom

² Dick White Referrals, Cambridge, United Kingdom

OBJECTIVES

The aims of the study were to identify the ultrasonographic findings in cats with acute kidney injury (AKI) and to assess whether they had prognostic value.

METHODS

A search of the computerised records of the RVC was performed for cats presenting with AKI between 2007 and 2016. Patients were excluded if they had historical data consistent with chronic kidney disease. A control population of cats with no documented renal disease,

that underwent abdominal ultrasound in the same time period, was randomly selected. Ultrasound images were reviewed for the presence of 6 renal sonographic abnormalities. Sonographic findings were compared individually and cumulatively to give an ultrasound score out of 6, between the two groups. Sonographic findings in the AKI group were assessed for association with oligo/an-uria and survival.

RESULTS

Forty-five cats with AKI fulfilled the inclusion criteria. Sixteen cats were included in the control group. In the AKI group, 6.7% (3/45) cats had normal renal size and architecture compared to 68.8% (11/16) cats in the control group. There was a statistically significant difference in ultrasound score between the two groups. In the AKI group there was an association between oligo/an-uria and presence of retroperitoneal fluid alone and ultrasound score and between 6-month survival and ultrasound score.

STATEMENT (CONCLUSIONS)

Sonographic findings are more likely to occur in cats presenting with AKI. The increasing number of renal sonographic abnormalities and the presence of retroperitoneal fluid alone is associated with oligo/an-uria and a higher ultrasound score may suggest a poorer long-term prognosis.

Performance of 2 low-cost pH meters against current pet-side standard

Panagiotis Archontakis, Adam Gow

Royal (Dick) School of Veterinary Studies, Edinburgh, United Kingdom

OBJECTIVES

Evaluate the utility of 2 low-cost portable pH meters and the agreement against a pH meter validated for veterinary use. Comparison of automated multistick reading with validated pH meter.

METHODS

Two-point calibration was performed for all meters at the beginning and every 10 samples. Dipsticks were assessed by an automatic analyzer. Urine samples from 52 dogs collected for clinical reasons were tested. Results of the low-cost meters were compared with the validated meter using Pearson's correlation and Bland-Altman plots. For comparison of multistick, results of the validated meter were converted to the nearest corresponding pH unit measurable on the multistick before analysis.

RESULTS

The nearest reference result frequently deviated by 0.5 units from the multistick reading. Strong correlation was present between the nearest reference result and multistick reading ($r^2=0.76$). Both low-cost meters' large footprint necessitated a larger minimum volume of urine than reference method. Both pH meters had very strong correlation with the validated pH meter ($r^2=0.998$ and 0.9975). For Bland-Altman, 95% limits of agreement were