CLINICAL ABSTRACTS 2021 | ORAL PRESENTATIONS

Following on from the success of BSAVA Virtual Congress 2021, we are delighted to present to you the 2021 Congress Clinical Abstracts. The congress programme committee have spent many hours reviewing some excellent clinical abstracts this year, with the quality and breadth of the 2021 abstract programme a testament to the high level of clinical research that was submitted.

From critical care to endocrinology and from orthopaedics to exotics, the submissions this year have covered a wide range of exciting developments in veterinary medicine, 30 years on from the first BSAVA Congress Abstracts in 1991. As a sign of the changing times since then, a number of the abstracts were presented in online poster form at the 2021 virtual congress, whilst more than 140 will also be presented orally at BSAVA's Congress Clinical Abstract Presentations Online programme on 24th-26th May 2021.

We would like to thank all the submitting authors for their hard work and for choosing BSAVA Congress as a forum in which to share their findings. We are also grateful for the willingness of oral abstract presenters to embrace the challenges of online presentations again this year – hopefully the experience is an enjoyable and rewarding one.

Thank you again for interacting with BSAVA Congress 2021 and see you next year!

Joe Fenn

BSAVA Congress Clinical Abstracts Chair

Note – the abstracts displayed are as supplied and BSAVA has not corrected typographical errors or edited the submission text. Any errors are the responsibility of the authors.

WEDNESDAY 26 MAY 2021

AM Room 1, 09:30 - 12:30 | PetSavers Grants, Exotics, Feline General Practice

09:30 Beta Cell Loss of Function Precedes Islet Loss in Diabetic Cats

Valeria Bergomi¹, Samuel Beck², Melanie Dobromylskyj³, Lucy Davison⁴, John Wills¹, Kate Hughes¹

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Objectives

Diabetes mellitus (DM) is a common condition that markedly impacts quality of pet cats and dogs. The aim of this study was to identify DM-associated perturbations in the feline pancreatic islet microenvironment. The utility of “clear, unobstructed brain imaging cocktails and computational analysis” (CUBIC) for three-dimensional (3D) pancreatic analysis was investigated.

Methods

Formalin fixed paraffin embedded tissues from cats with DM, or control cats without pancreatic pathology, were retrospectively identified. Immunohistochemistry and immunofluorescence were used to assess changes in islets. An image analysis pipeline was developed to analyse images acquired from two-dimensional immunofluorescence. CUBIC was used to optically clear selected pancreas samples prior to immunofluorescence and deep 3D confocal microscopy.

Results

Diabetic cats have a significant reduction in synaptophysin-positive islet area. Intriguingly, whilst islets from diabetic patients have similar numbers of β cells to islets from control cats, a significant decrease in intensity of insulin expression can be observed in the former. This suggests a potentially significant step in the pathogenesis of feline DM: a decrease in function of β cells prior to their destruction. CUBIC facilitates clear visualisation of pancreatic islets in 3D.

Statement (conclusions)

- Further characterisation of β cell functional changes prior to their loss will provide essential insights into potential new therapeutic targets in order to preserve islet cells and restore their functionality, with the goal of decreasing dependence on insulin treatment and improving quality of life.
- CUBIC technology has the potential to revolutionise the way we visualise pathology occurring the islets of diabetic pets.

09:45 Effect of Time and Storage Conditions on The Stability of Total Serum Thyroxine in Feline Blood

Rory Scrace¹, Tim Williams¹, Melanie Hezzell², Nicholas Bexfield¹

¹University of Cambridge, Cambridge, United Kingdom. ²University of Bristol, Bristol, United Kingdom

Objectives

The stability of feline serum total thyroxine (tT₄) during short-term storage has not been reported in the peer-reviewed literature to date. This study aimed to assess the stability of feline serum tT₄ over a period of 168 hours at room temperature (~21°C) or 4°C.

Methods

Frozen residual feline serum samples were collected, pooled (average tT₄ concentrations of 102, 44 and 13 nmol/L) and then stored at 4°C or ambient room temperature. tT₄ was measured (in triplicate) using an enzyme immunoassay (DRI® Thyroxine Assay, Microgenics Corporation) at 0, 24, 48, 96 and 168 hours. Change in tT₄ over time at both temperatures was assessed using a repeated measures linear mixed effects model.

Results

tT₄ increased over time at both 4°C and room temperature in all pools, with an average rate of increase of 0.34 nmol/L/day and 0.79 nmol/L/day respectively (both p<0.001). The rate of increase in tT₄ was significantly different between samples stored at room temperature and 4°C (p<0.001).

Statement (conclusions)

Whilst a statistically significant increase in tT₄ was observed in samples stored at both temperatures, the magnitude of increase is unlikely to alter clinical decisions in patients with marginal tT₄. We hypothesise that the observed increase in tT₄ may be due to changes in sample pH over time (associated with liberation of CO₂) which enhances dissociation of thyroxine from plasma binding proteins in the enzyme immunoassay. Therefore a change in tT₄ over time may not be observed when non-enzymatic methods are used to measure tT₄.

10:00 Successful Treatment of Immune-Mediated Haemolytic Anaemia (IMHA) In A Pet Rabbit

Sarah Brown

Holly House Veterinary Hospital, Leeds, United Kingdom

Objectives

To treat a one year-old male neutered dwarf rabbit presented with weight loss and lethargy. Clinical examination was unremarkable other than poor body condition, mucous membrane pallor and a palpable abdominal mass.

Methods

Bloodwork showed a packed cell volume (PCV) of 10% and a severe regenerative anaemia with red cells showing marked polychromasia, anisocytosis and poikilocytosis. Weak red cell agglutinates and spherocytes were present.

Blood biochemistry, plus abdominal and thoracic radiography and ultrasonography were unremarkable other than a small mid-abdominal mass identified on ultrasonography – potentially an enlarged lymph node. Fine needle aspirate cytology suggested marked suppurative inflammation, although no bacteria were evident.

Given the severe regenerative anaemia, presence of spherocytes and spontaneous autoagglutinates and lack of evidence of internal haemorrhage, a provisional diagnosis of IMHA was made, potentially secondary to a suppurative inflammatory process.

Results

Oral prednisolone (immunosuppressive dose starting at 2mg/kg bid and gradually tapered) was started, along with a two week course of daily penicillin-streptomycin injections. The rabbit's demeanour and pallor improved remarkably with serial increases in PCV to 33% five weeks later (red cells normocytic and normochromic). The rabbit continued to do well and the prednisolone was stopped nine weeks after starting therapy (PCV = 36%). The abdominal mass was no longer palpable and further investigations were declined. There has been no recurrence of signs three years later.

Statement (conclusions)

IMHA in rabbits is rare, with few cases in the literature. This case illustrates a good response to treatment with prednisolone, despite the concerns of steroid use in this species.

10:15 Prednisolone Therapy in The Management of a Focal Epitheliotropic Lymphoma Skin Lesion in A Guinea Pig (*Cavia Porcellus*)

Kristina Hunter

CityVets, Exeter, United Kingdom

Objectives

To present a guinea pig with chronic angular cheilitis due to epitheliotropic lymphoma and to discuss management with prednisolone therapy.

Methods

A 3 year-old female guinea pig presented with a focally extensive, erosive, scaling, erythematous plaque affecting the mucocutaneous junction of the right lip. Routine bloodwork, radiography and microscopy did not reveal any abnormalities. Biopsy identified dense sheets of round cells with indistinct cell borders and nucleoli. Cells showed diffuse invasion into the dermis, subcutaneous adipose tissue and skeletal muscle consistent with low grade epitheliotropic lymphoma. Given the severe clinical signs and lack of response to empirical treatment such as antimicrobials and meloxicam, treatment with prednisolone was considered.

Results

Oral prednisolone therapy was trialled, with a dosage up to 1.5mg/kg required to improve clinical signs. Marked improvement was noted in demeanour, appetite and dysphagia. The lesion showed resolution of erythema, erosion and scaling but affected skin remained thickened. Therapy was tapered to 1mg/kg sid as progressive polyuria, polydipsia and weight loss developed on the higher dose regimen after 13 days. Relapse occurred four months into treatment which did not respond to further dose increases and the animal died six months after diagnosis.

Statement (conclusions)

Epitheliotropic lymphoma in guinea pigs is rare with the few reported cases in literature exhibiting diffuse skin lesions and rapid progression necessitating euthanasia before treatment was attempted.

This case demonstrates that focal lesions may have a different clinical progression and that palliative management with prednisolone therapy can prolong survival time.

10:30 Veterinary Health Information on Hamsters for Clinicians: A VetCompass Perspective

Kate Kim, Vicki Baldrey, Camilla Pegram, David B. Church, David C. Brodbelt, Dan G. O'Neill

Royal Veterinary College, Hertfordshire, United Kingdom

Objectives

To report the prevalence of common disorders and mortality of hamsters under primary veterinary care in the UK. Specific focus was placed on sex-associated effects.

Methods

VetCompass retrospective cohort study of anonymised clinical records from 3998 hamsters attending 748 UK practices in 2016. Multivariable binary logistic regression modelling evaluates sex as a risk factor, accounting for species, age, and neuter status as confounding factors.

Results

There were 1829 (50.1%) female and 1819 (49.9%) males. The median lifetime disorder count per hamster was 1 (IQR:1-2, range:0-8). The most prevalent specific disorders were wet tail (prevalence:7.3%, 95%CI:6.6-8.2) and hamster bite (5.9%, 95%CI:5.2-6.7). The most prevalent grouped disorders were traumatic injury (15.4%, 95%CI:14.3-16.6) and enteropathy (11.3%, 95%CI:10.3-12.3). Females were predisposed for wet tail (odds ratio:2.6, $P<0.001$) and enteropathy (OR:2.0, $P<0.001$) whereas males were predisposed to hamster bites (OR:1.8, $P=0.009$).

Overall median age at death was 1.8 years (IQR:0.8-2.2, range:0.01-3.7). Males had higher median ages at death (2.0 years, IQR:1.0-2.4, range:0.2-3.7) than females (1.7 years, IQR:0.9-2.0, range:0.1-3.3) ($P<0.001$). The most common specific causes of death were wet tail (6.3%, 95%CI:5.1-7.7), abdominal mass (5.1%, 95%CI:5.1-7.7), and neoplasia (4.3%, 95%CI:3.3-5.5). The most common grouped causes of death were neoplasia (11.1%, 95%CI:9.6-12.9), mass (10.8%, 95%CI:9.3-12.6), and enteropathy (9.4%, 95%CI:7.9-11.0). Females had higher proportional mortality for wet tail (OR:3.6, $P<0.001$) and enteropathy (OR:2.0, $P=0.007$) whereas males had higher proportional mortality for neoplasia (OR:1.7, $P=0.005$).

Statement (conclusions)

Veterinarians now have a robust evidence base on common disorders and causes of death directly sourced from, and thus relevant to, first opinion veterinary caseloads.

11:00 Feline Infectious Peritonitis: How Do Wet and Dry Patients Differ?

Toby D. Collen, Dan G. O'Neill, Dave C. Brodbelt, David B. Church, Rebecca F. Geddes

Royal Veterinary College, Hertfordshire, United Kingdom

Objectives

1. Report prevalence and risk factors for feline infectious peritonitis (FIP) in a referral caseload
2. Compare signalment, history, clinical examination and clinical pathology between wet and dry FIP cases.

Methods

VetCompass clinical records from all cats at a large UK referral centre between 01/01/2009 – 01/01/2019 were searched to identify FIP cases. Signalment factors between cases and non-cases, and all factors between wet and dry cases, were compared using univariable analyses.

Results

182 of 11,431 cats had FIP: overall prevalence 1.59% (95% CI 1.36-1.82%), comprising 75 dry (41.2%) and 107 wet (58.8%) cases.

Compared with non-FIP cats, cases were younger (median 13 vs 91 months, $p < 0.001$), and more likely to be entire (OR=3.76, 95% CI 2.74-5.13) and male (OR=2.09, 95% CI 1.51-2.92). Compared with the remaining cats, British Blues (OR=4.87, 95% CI 2.52-9.52), British Shorthairs (OR=2.69, 95% CI 1.69-4.29) and Ragdolls (OR=5.34, 95% CI 2.98-9.19) had increased odds, with Siamese (OR=0.00, 95% CI 0.00-0.881) and non-purebred cats (OR=0.265, 95% CI 0.197-0.358) under-represented.

Wet and dry FIP groups did not differ in signalment or recent cat contact, stressors and cat counts per household.

Maximum rectal temperatures, alpha-1 acid glycoprotein and feline coronavirus antibody titres did not differ between FIP types ($p > 0.05$). However, several clinical signs and clinical pathology parameters attributable to effusions were more common in wet FIP.

Statement (conclusions)

FIP is not uncommon in referral practice, and young, male, entire cats of certain pure breeds should have a higher index of suspicion for FIP. Factors driving development of wet versus dry FIP remain elusive.

11:15 Is There A Stress Component to Gastrointestinal Disease in Cats? A Look at The Behavioural and Environmental Risk Factors

Anna Garvey¹, Aarti Kathrani², Jess Williams¹, Edward Hall¹, Emily Blackwell¹

¹University of Bristol, Bristol, United Kingdom. ²Royal Veterinary College, London, United Kingdom

Objectives

1. Calculate the prevalence of gastrointestinal disease in a cohort of domestic pet cats.
2. Identify and quantify, using prospectively collected data, the strength of associations relating to:
 - The signalment of the cat

- Diet type
- Exposure to potential environmental stressors
- Personality of the cat

that increase/decrease the risk of chronic gastrointestinal disease.

Methods

Using data from owner questionnaires, completed as part of the Bristol Cats Study (a longitudinal cohort study of 2444 cats) risk factors for chronic gastrointestinal disease were analysed using multivariate logistic regression. A subset of 40 cats (20 cases and 20 unaffected controls) were visited at home. Hair samples were collected for cortisol analysis and behavioural tests were conducted to examine individual differences in response to novelty.

Results

The prevalence of chronic gastrointestinal disease in the population of cats at 2.5 years old was shown to be 6.8%. Antagonism with other cats in the household, moving house, being indoor only and having cat fights were all associated with an increased odds ratio of having recurrent gastrointestinal disease.

Statement (conclusions)

The risk factors of feline chronic gastrointestinal disease are poorly understood, particularly as to whether there is an affective or stress component to it. These findings demonstrate that daily environmental stressors may have an effect and is therefore an essential finding in promoting the idea that stress should be considered when presented with cats suffering chronic gastrointestinal disease.

11:30 Bicavitary Effusion in Cats: Retrospective Analysis of Signalment, Clinical Investigations, Diagnosis and Outcome

Christopher Hoey¹, Vicki Black²

¹University of Bristol, Bristol, United Kingdom. ²Langford Vets, Bristol, United Kingdom

Objectives

To describe the aetiology and outcome in cats with pleural and peritoneal effusion (bicavitary effusion).

Methods

Clinical records of cats with pleural and peritoneal effusion were retrospectively reviewed from a referral hospital between September 2009 and October 2020. Signalment, clinical investigations, diagnosis and outcome were assessed. Cases were assigned to disease categories (infectious, inflammatory, neoplastic, cardiac, volume overload, protein-losing nephropathy, hepatic dysfunction

and no diagnosis). Outcome was assessed as survival to discharge and 30-day survival. Cats were excluded from analysis if they had obvious trauma to account for their bicavitary effusion (18 cats).

Results

One hundred and ten cases were identified with a median age of 7 years (4 months to 18 years 10 months). Neoplasia was diagnosed in 20 cats (18%), congestive heart failure in 13 (12%), infectious disease in 13 (12%), inflammatory disease in 10 (9%), protein-losing nephropathy in 6 (5%) and volume overload in 3 (3%). Fourteen cats (13%) had more than one disease category.

In the remaining 31 cats infectious disease was strongly suspected in 9 and neoplasia strongly suspected in 8. No diagnosis was reached or recorded to be suspected in 14 cats (13%).

Forty-six (42%) cats survived to discharge. Follow-up was not available in 21 of the discharged cats. 30-day survival analysis was available for 89 cases. In total 67/89 (75%) were deceased at 30 days.

Statement (conclusions)

In this cohort of cats bicavitary effusion was most commonly associated with neoplasia, congestive heart failure or infectious disease and appeared to be associated with a poor prognosis.

11:45 Investigating the Association Between Feline Morbillivirus Infection and Feline Lower Urinary Tract Disease (FLUTD) In Cats

Nicholas Hope, Tim Williams

Department of Veterinary Medicine, University of Cambridge, Cambridge, United Kingdom

Objectives

Feline morbillivirus (FeMV) RNA has been previously identified within urine of cats suffering from FLUTD. This study evaluated the association between feline morbillivirus (FeMV) exposure and FLUTD in UK cats. A secondary aim was to evaluate if FeMV seropositivity increases with age in cats.

Methods

Retrospective, case control study. Stored serum samples from cats with clinical signs and urinalysis findings (haematuria in absence of pyuria) consistent with FLUTD, and age matched healthy control cats were selected. Seropositivity was determined for FeMV by western blotting against a FeMV nucleoprotein clone. Comparison of the proportion of cats that were seropositive in each group was made using the Fisher's Exact Test, with statistical significance defined as $P < 0.05$.

Results

Fifteen appropriate FLUTD cases were identified (age 1.5-8 years). Seroprevalence of FeMV antibodies in the FLUTD group ($n=5$, 33%) was not significantly different to that of aged matched controls ($n=2$, 13%; $P=0.39$). Seroprevalence in healthy cats <6 years and >6 years was 11% (95% confidence interval [CI] 2-44%) and 50% (95% CI 19-81%) respectively. When both healthy and FLUTD cats were considered, the seroprevalence of cats <6 years and >6 years were 22% (95% CI 9-45%) and 67% (95% CI 39-86%) respectively.

Statement (conclusions)

Our results show no significant association between seroreactivity and a clinical diagnosis of FLUTD, however our study was statistically underpowered to detect significant differences at this effect size. Our results suggest an increase in seropositivity with increasing age, however larger studies would be required to confirm these findings.

12:00 Signs and Alleviation of Travel Anxiety in Cats – A Survey Among Cat Owners

Terttu Lamminen, John Aspegrén

Orion Corporation Orion Pharma, Espoo, Finland

Objectives

The aim was to collect information about the signs of travel anxiety in cats and the use of medication and other products to alleviate those signs.

Methods

Cat owners in the UK and US were contacted via email and/or social media, and the questionnaire was shared by a public web link. The survey was done by using Webropol 3.0.

Results

364 owners (UK: 261, US: 103) completed the survey for 451 cats (UK: 326, US: 125) with travel anxiety. The most common signs were vocalisation (80%), abnormal activity (40%) and panting (30%). 80% had started showing signs early in their lives, and the travel anxiety had either not changed or worsened over time. Many cats expressed similar signs also in other situations, like when placed in a carrier box (36%), visiting a veterinary clinic (35%), or exposed to any new environment (15%).

Pheromone (14%) and other non-medicinal products (10%) were most frequently used to alleviate signs of anxiety during transportation, but were often assessed to have poor (55%) or only some (35%) effect. Few owners (2%) had used off-label prescription medicines. However, most (61%) would be interested in trying if there was a registered prescription medicine for travel anxiety available for cats. Oral solution, gel or paste were preferred over tablet formulation.

Statement (conclusions)

This survey increases knowledge about the signs of travel anxiety in cats, and medications and other products currently used to manage the problem. It shows that there is a clear unmet need to effectively relieve cats' anxiety during transportation.

12:15 Pet Owners' Willingness to Pay for Therapy Outcomes in Feline Pain Associated with Osteoarthritis

Louise Longstaff¹, David Bartram¹, Edwina Gildea¹, Andrea Wright¹, Danielle Riley², Nirav Nagda², Kristina DiPietrantonio², Ashley Enstone², Robin Wyn²

¹Zoetis, Inc., Parsippany, NJ, USA. ²Adelphi Values PROVE, Bollington, United Kingdom

Objectives

To investigate pet owners' willingness to pay for quality of life (QoL) improvements with innovative therapies for pain associated with feline osteoarthritis (OA).

Methods

A review of existing literature and exploratory interviews with cat owners (n=3) were conducted to identify behaviours in pain associated with OA that impact feline and pet owner QoL. A variety of feline QoL health state descriptions and product attributes were subsequently developed and validated through veterinarian interviews (n=3). Health states were presented via an online survey to 255 pet owners. Survey questions gathered cat owners' preference for QoL improvements, and their willingness to initiate and pay for (unbranded) therapies at various price points.

Results

The majority of cat owners highlighted that they would be willing to initiate treatment for pain associated with OA. When presented with two product profiles, significantly more pet owners (72%) preferred a novel monoclonal antibody (mAb) profile, with improved safety and efficacy, when compared to the standard of care (SoC) profile (27%, $p=0.00$). Additionally, the majority of cat owners (85%) did not find taking their cat to the clinic for treatment administration once a month burdensome. Cat owners were willing to pay (WTP) for improved QoL, and prioritized improvements within QoL domains, such as mobility, pain and well-being.

Statement (conclusions)

Cat owners value and are WTP for QoL improvements for their cat. Veterinarians should offer all available treatment options, despite varying price ranges, to ensure the treatment outcomes cat owners desire are achieved.