Oral presentations

Double-blind, placebo-controlled, randomized study to evaluate the weight gain drug, mirtazapine transdermal ointment, in cats experiencing unintended weight loss: A post-hoc analysis of cats with suspected renal disease

**Beasley Mason, Valentine Williams,
Tianhua Hu, Jessica Lee, Melinda Poole**

Kindred Biosciences, Inc., Burlingame, USA

OBJECTIVES

To evaluate the safety and effectiveness of mirtazapine transdermal ointment in cats with unintended weight loss. This post-hoc analysis was conducted in cats with

suspected renal disease, as there is a potential delayed clearance of mirtazapine in these cats.

METHODS

Client-owned cats ≥ 1 year of age, weighing ≥ 2 kg, with a documented loss ($\geq 5\%$) in body weight (BW) were included. Cats were treated once daily with either 2 mg/cat mirtazapine transdermal ointment (Kindred Biosciences, Inc.) or placebo ointment applied to the inner surface of the pinna for 14 ± 3 days. Mean percent change in BW between the mirtazapine and placebo group was evaluated from Day 1-to-14. A post-hoc analysis was conducted to evaluate the subset of enrolled cats with suspected renal disease (defined as having urine specific gravity < 1.035 and serum creatinine $> 122 \mu\text{mol/L}$ [1.6 mg/dL] at baseline).

RESULTS

A total of 230 cats were enrolled ($n = 115$ in both groups). Of the intent-to-treat population, suspected renal disease was identified in 49 mirtazapine and 44 placebo cats. The mean percent change in BW was $+ 3.9\%$ ($\text{SE} \pm 0.8\%$) in the mirtazapine and $+ 0.9\%$ ($\pm 0.5\%$) in the placebo group ($p = 0.0022$). There was no significant difference between groups in incidence of overall adverse events (AEs) ($p = 0.774$) or behavioral AEs of vocalization ($p = 0.1183$) and hyperactivity ($p = 0.3637$).

STATEMENT (CONCLUSIONS)

Daily topical application of mirtazapine transdermal ointment to the inner pinna of the ear effectively increased body weight within 14 days in client-owned cats with suspected renal disease experiencing unintended weight loss.

Renaltec attenuates serum levels of indoxyl sulfate in geriatric cats

Jose Mottet¹, Nikolaus Kowolik²

¹ Vera Icon, Tongeren, Belgium
² Porus GmbH, Monheim, Germany

OBJECTIVES

Indoxyl sulfate (IS) is an important uremic toxin that originates from the metabolic breakdown of tryptophan into indole by intestinal bacteria and conversion into IS in the liver. Serum IS concentrations are directly related to loss

of renal function in cats and IS serves as a marker of progression risk in cats with chronic kidney disease (CKD). Renaltec has been shown to be a potent and selective binder of indole in the feline gut. The objective of this study was to evaluate the efficacy of renaltec in lowering serum IS levels in cats.

METHODS

Eighteen apparently healthy geriatric cats (11–16 years) were divided into two groups. Twelve cats received 500 mg renaltec mixed with 10 gram of a liquid cat snack once daily for 56 days (treatment group) while 6 cats served as negative control. All cats received the same type of food. Blood samples were taken every 2 weeks and serum IS concentrations were measured by Liquid Chromatography Mass Spectrometry.

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RESULTS

The mean serum IS concentration dropped significantly from 1637.6 mg/L (day 0) to 650.6 mg/L (day 56) in the treatment group ($p = 0.0058$) while no significant change was observed in the control group (from 323.8 mg/L on day 0 to 599.7 mg/L on day 56; $p = 0.5670$).

STATEMENT (CONCLUSIONS)

Daily administration of renaltec reduced serum IS levels by more than 60% in this cohort of cats after 8 weeks of treatment. Further studies are needed to investigate the effects of renaltec on IS levels in cats with confirmed CKD.

Prevalence and characterization of urinary cultures in owned dogs and cats from Spain

**Anna Vila¹, Eduardo Hernáñez¹,
Jaume Rodón², Xavier Roura¹**

- 1 Hospital Clínic Veterinari, Universitat Autònoma de Barcelona, Barcelona, Spain
- 2 Idexx Laboratories, Barcelona, Spain

OBJECTIVES

Due to the lack of information among urinary tract infection (UTI) in Spain, our objective is to describe the prevalence and characterization of urinary tract pathogens in urine samples from dogs and cats with urinary clinical signs.

METHODS

This is a cross-sectional study with records of canine and feline urine cultures from all Spain during a one-year

study period (March 2017–2018). The urine samples were collected from dogs and cats with clinical signs of UTI and delivered by the veterinary on duty to Idexx's laboratories for culture.

RESULTS

A total of 9,957 (6772 canine; 3185 feline) urinary cultures were performed with 34.6% yielded positive. Although 110 different bacterial and fungal species were isolated, only 7 bacterial genera accounted for 90.6% of the urinary isolates, including: *Escherichia coli* (49.56%), *Proteus* spp. (12.12%), *Enterococcus* spp. (9.80%), *Staphylococcus* spp. (8.40%), *Klebsiella* spp. (4.55%), *Pseudomonas* spp. (4.03%), and *Streptococcus* spp. (2.11%). Among these genera, dogs had a generally higher predisposition than cats did, 39.29% and 24.7% respectively. Distributions of UTI diagnosis tended to be similar between species, although *Enterococcus* spp. had been more prevalent in cats. Infection with single bacteria was responsible for 93.76% of UTI in both species.

STATEMENT (CONCLUSIONS)

Given the results of the present study, canine and feline UTI in Spain can be characterized as follows: (1) bacterial UTIs were more prevalent than in previous reports; (2) the vast majority of canine UTI were caused by single bacteria; (3) *Escherichia coli* was singularly the most prevalent agent in canine and feline UTI.

Canine urinary extracellular vesicles as bactericidal agents *in vitro*

**Samantha Raettig¹, Fiona E. Karet Frankl²,
Tim Williams³**

- 1 School of Veterinary Sciences, University of Bristol, Bristol, United Kingdom
- 2 Departments of Medical Genetics and Division of Renal Medicine, University of Cambridge, Cambridge, United Kingdom
- 3 Department of Veterinary Medicine, University of Cambridge, Cambridge, United Kingdom

OBJECTIVES

Urinary extracellular vesicles (UEVs) from healthy human volunteers exhibit bactericidal activity *in vitro* which is independent of the bacteriostatic urinary protein, uromodulin. Thus, UEVs are postulated to be innate immune effectors of the urinary tract. This study aimed to evaluate the bactericidal activity of canine UEV preparations.

METHODS

Free-catch urine samples were collected from client-owned dogs. Triplicate aliquots of UEVs isolated by differential centrifugation were co-incubated with luminescent BL21 *E. coli*, previously transfected with the *luxCDABE* operon. Luminescence was determined half-hourly and area under the growth curve (AUC) calculated. UEVs were classified as bactericidal if AUC of BL21 *E. coli* co-incubated with UEVs was significantly lower

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