



Collection of Commentaries on Veterinary, Medical, & Related Literature

UROLOGY

Interim Evaluation of the Efficacy and Safety of a High Dose Short Duration Enrofloxacin Treatment Regime for Urinary Tract Infection in Dogs

Irom S, Westropp J, Chew D, Daniels J.

Journal of Veterinary Internal Medicine 2011; 25:723 (abstract).

Management for canine urinary tract infections (UTIs) usually includes 7 to 14 days of antibiotic treatment; however, compliance with these recommendations can be an issue. Short-duration fluoroquinolone dosing is often used in human medicine to treat uncomplicated UTIs. This study determined whether a high-dose, short-duration enrofloxacin treatment was equivalent in efficacy when compared with a standard UTI antimicrobial protocol. Client-owned adult dogs with naturally-occurring, uncomplicated UTIs were randomly assigned to 1 of 2 treatment groups: 1) 18 to 20 mg/kg oral enrofloxacin Q 24 H for 3 days; and 2) 13.75 to 25 mg/kg oral amoxicillin-clavulanate Q 12 H for 14 days. Both groups had urinalyses and urine cultures performed on day 0, 10, and 21. At the time of interim analysis, 36 dogs had completed the trial. Bacteriologic cure was achieved in 15 dogs (83%) treated with enrofloxacin and 14 dogs (78%) treated with amoxicillin-clavulanate. These results suggest that the high-dose, short-duration enrofloxacin protocol was equally effective to the standard protocol in treatment for uncomplicated canine UTI.

Gregory F. Grauer, DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine), Kansas State University

Editor's Note: It would have been interesting to expand the scope of this study and treat 2 groups of dogs with enrofloxacin, with 1 group receiving high-dose short-duration therapy and the other, lower-dose longer-duration therapy. Comparing 2 groups treated with the same antibiotic would have removed the variable of differing antibiotic sensitivities, allowing researchers to isolate and cleanly test the effect of dose and duration of enrofloxacin.

CRITICAL POINTS

- This study determined whether high-dose, short-duration enrofloxacin therapy was as efficacious as standard antimicrobial protocol for canine UTIs.
- Study dogs were split into 2 groups; one received enrofloxacin and the other received clavulanate.
- The results indicated that high-dose, short-duration enrofloxacin is an effective treatment for uncomplicated canine UTIs.



INFECTIOUS & ZOO NOTIC DISEASE

Prevalence of Infectious Diseases in Cats and Dogs Rescued Following Hurricane Katrina

Levy JK, Lappin MR, Glaser AL, et al.

Journal of the American Veterinary Medical Association 2011; 238(3):311-316.

This article describes a cross-sectional study to determine the prevalence of infectious diseases with zoonotic potential in animals rescued and relocated after Hurricane Katrina from the Gulf Coast area. Study animals included any cat or dog transferred from the disaster area from which blood or serum samples could be obtained:

- 414 dogs were tested for *Anaplasma*, *Babesia*, *Bartonella*, *Borrelia burgdorferi*, canine influenza virus (CIV), *Dirofilaria immitis*, *Ehrlichia*, *Mycoplasma*, *Toxoplasma*, West Nile virus (WNV), and *Wolbachia*.
- 56 cats were tested for *Bartonella*, *Cytauxzoon*, *D immitis*, *Ehrlichia*, feline immunodeficiency virus (FIV), feline leukemia virus (FeLV), *Mycoplasma*, *Toxoplasma*, WNV, and *Wolbachia*.

The results demonstrated that, based on the samples obtained, cats and dogs relocated from the disaster area had evidence of multiple infectious diseases.

- In dogs, prevalence was highest for WNV (55.9%), *D immitis* (48.8%), *T gondii* (25.1%), and *Mycoplasma* (11.9%).
- In cats, prevalence was highest for *Bartonella* (89.1%), *T gondii* (23.6%), *Mycoplasma* (10.6%), WNV (10.4%), *D immitis* (8%), and FIV (7.1%).

These results could be associated with expansion of geographical ranges for some of those diseases to nonendemic areas.

Joel D. Ray, DVM, MS, Mississippi State University

CRITICAL POINTS

- This study determined the prevalence of infectious/zoonotic diseases in animals that were rescued and relocated after Hurricane Katrina.
- Blood and serum samples from 414 dogs and 56 cats were tested for a variety of diseases, including *Anaplasma*, *Babesia*, *Bartonella*, *B burgdorferi*, CIV, *Cytauxzoon*, *D immitis*, *Ehrlichia*, FeLV, FIV, *Mycoplasma*, *Toxoplasma*, WNV, and *Wolbachia*.
- In dogs, the highest prevalence was for WNV (55.9%); in cats, *Bartonella* (89.1%).
- Shared prevalences included *D immitis*, *Mycoplasma*, *T gondii*, and WNV.

GASTROENTEROLOGY

Identification of Risk Factors for Septic Peritonitis and Failure to Survive Following Gastrointestinal Surgery in Dogs

Grimes JA, Schmiedt CW, Cornell KK, Radlinksy MG.
Journal of the American Veterinary Medical Association 2011;
238:486-494.

This retrospective cohort study reviewed medical records from 197 dogs admitted to the University of Georgia Veterinary Teaching Hospital that underwent 225 exploratory celiotomies. History, clinicopathologic findings, surgery characteristics, and outcome were recorded. Of the 225 surgeries, 45 (20%) involved dogs with pre-operative septic peritonitis, of which 17 (38%) developed postoperative septic peritonitis and 15 (33%) died. Of the 180 dogs without pre-operative septic peritonitis, 11 (6%) developed postoperative septic peritonitis, of which 5 died. Major risk factors identified for development of postoperative septic peritonitis included:

- Pre-operative septic peritonitis
- Low pre-operative serum albumin and plasma protein concentration
- Intra-operative hypotension.

The presence of a gastrointestinal foreign body was statistically associated with a lower risk of postoperative septic peritonitis.

Anusha Balakrishnan, BVSc, University of Pennsylvania

CRITICAL POINTS

- This study suggested that pre-operative albumin and plasma protein concentrations were significant predictors of anastomotic complications. This is likely due to their important role in wound healing, and because they are markers of systemic disease and nutritional status.
- Intra-operative hypotension was found to be a significant predictor of postoperative peritonitis for 1 of 2 reasons: (1) its role as a marker for systemic disease or (2) direct impairment of healing secondary to poor tissue perfusion and oxygenation.
- Pre-operative septic peritonitis is a major risk factor for postoperative septic peritonitis. Administration of antimicrobials during surgery decreased this risk while postoperative administration of corticosteroids increased the risk.
- Therapeutic efforts should be focused on improving pre-operative albumin and protein concentrations as well as aggressive efforts to maintain normotension intra-operatively.



ANALGESIA & UROLOGY

Coccygeal Epidural with Local Anesthetic for Catheterization and Pain Management in the Treatment of Feline Urethral Obstruction

O'Hearn AK, Wright BD.
Journal of Veterinary Emergency and Critical Care 2011; 21(1):50-52.

Male cats with urethral obstruction are common emergencies, requiring sedation or general anesthesia to facilitate urethral unblocking and urinary catheter placement. The presence of hyperkalemia and/or metabolic acidosis secondary to urethral obstruction often increases the anesthetic or sedation-associated risks in affected cats. In this report, the technique for a coccygeal epidural block is described as a method to provide local anesthesia in conjunction with light sedation in order to achieve urethral catheterization.

After light sedation (eg, an opioid and benzodiazepine), the cat is placed in sternal recumbency. Either the sacrococcygeal space or the space between the first and second coccygeal vertebrae is identified as the needle entry site, over which the skin is aseptically prepared. A 25-gauge, 1-inch needle is advanced into the epidural space at a 35° to 40° angle. Then 0.1 to 0.2 mL/kg of 2% lidocaine is injected into the epidural space.

When performed correctly, the anesthetic effect to the caudal urogenital tract, colon, anus, perineum, and tail occurs within 5 minutes of administration and may last up to 1 hour. Most important, the motor function of the hindlimbs is preserved. The authors suggest that coccygeal epidural block may be a useful and safe local anesthetic technique for the management of feline urethral obstruction.

Debra Liu, DVM, University of Pennsylvania

CRITICAL POINTS

- A coccygeal epidural block is a practical local anesthetic technique to be considered as part of the sedation/anesthesia protocol for unblocking male cats with urethral obstruction.
- A coccygeal epidural block provides anesthesia to the caudal urogenital tract, colon, anus, perineum, and the tail, while preserving the motor function of the rear limbs.
- When performed correctly, the anesthetic effect occurs within 5 minutes of administration and may last up to 1 hour.



RESPIRATORY MEDICINE

Inflammatory Polyps of the Nasal Turbinates of Cats: An Argument for Designation as Feline Mesenchymal Nasal Hamartoma

Greci V, Mortellaro CM, Olivero D, et al.

Journal of Feline Medicine and Surgery 2011; 13(4):213-219.

The term *inflammatory polyps of the nasal turbinates* (IPNT) has been used to describe a rare, benign disease of the upper respiratory tract (URT) of cats. Clinical signs of this disease include sneezing, stertor, epistaxis and, less commonly, serous nasal discharge or facial deformation. These cystic, often red-grey colored polyps originate in the nasal passages and can expand into the nasopharynx. Inflammatory nasal polyps are in contrast to the more solid, white-pink colored *nasopharyngeal polyps* (NPPs) that originate in the eustachian tube of cats, potentially extending into the middle ear and/or nasopharynx. While cats with both IPNT and NPP tend to be young at time of presentation (< 1 year), the diseases can often be differentiated clinically since NPPs are not associated with epistaxis.

In this study the authors compared the clinical and histopathologic findings of 5 cats with IPNT to published descriptions of nasal hamartomas (NHs) in children. The mean age of the cats was 10.8 months (range, 6–18 months), with a mean duration of clinical signs of 3.5 months (range, 1–8 months). None of the cats had a history of URT infection as kittens.

Histopathology (described at length in the manuscript) was consistent with that of human mesenchymal NH, in that the tissues were composed of 2 or more mesenchymal components and fibrous tissue, with appropriate immunohistochemical staining properties. The authors suggest that this may be a hereditary or congenital disease; however, the etiology is unknown. Despite the locally invasive nature of these lesions and radiographic changes consistent with malignancy, NHs carry a good prognosis with the potential for cure with complete excision. The authors conclude by proposing that IPNT be renamed *feline mesenchymal nasal hamartoma* to more accurately describe the condition.

CRITICAL POINTS

- Inflammatory polyps of the nasal turbinates (IPNT) describes a rare, benign disease of the URT of cats (usually young cats).
- This study compared the clinical and histopathologic findings of 5 cats with IPNT to published descriptions of nasal hamartomas (NHs) in children.
- Histopathology was consistent with that of human mesenchymal NH.
- The authors proposed replacing the term *IPNT* with *feline mesenchymal nasal hamartoma* to more accurately describe the disease.

Claire R. Sharp, BSc, BVMS(Hons), MS, Diplomate ACVECC, Tufts University



DERMATOLOGY

Masitinib Decreases Signs of Canine Atopic Dermatitis: A Multicentre, Randomized, Double-Blind, Placebo-Controlled Phase 3 Trial

Cadot P, Hensel P, Bensignor E, et al.

Veterinary Dermatology 2011; 22(6):554-564.

Masitinib is a selective tyrosine kinase inhibitor that downregulates mast cell functions. This study investigated the efficacy and safety of masitinib (Kinavet CA-1, kinavet.com) for the treatment of canine atopic dermatitis (AD). Dogs with AD received masitinib orally at 12.5 mg/kg Q 24 H ($n = 202$) or control ($n = 104$) for 12 weeks. There was a reduction in AD per the Canine Atopic Dermatitis Extent and Severity Index (CADESI-02), with a score of $\geq 50\%$ at week 12 in 61% of masitinib-treated dogs versus 35% of control dogs ($P < 0.001$). For dogs resistant to cyclosporin and/or corticosteroids (60% of the study population), CADESI-02 response rates were 60% (masitinib group) versus 31% (control group) ($P = 0.004$). The mean reduction in pruritus score of severely pruritic dogs was 46% versus 29% (control group) ($P = 0.045$). In total, 13.2% dogs presented with severe adverse effects (16% masitinib treated versus 7.7% control). Masitinib showed a greater risk for reversible protein loss from the kidneys, mostly during the first 3 months of treatment; surveillance of serum albumin and proteinuria every other week was recommended. Masitinib was shown to be an effective and mostly well-tolerated treatment for canine AD, including severe and refractory cases.

CRITICAL POINTS

- Oral masitinib may be an alternative treatment for canine AD, particularly in severe and refractory cases.
- Reversible protein loss from the kidney is a reported adverse effect, mostly during the first 3 months of therapy; therefore, regular monitoring of albumin and proteinuria is recommended.

Sandra Koch, DVM, MS, Diplomate ACVD, University of Minnesota



THERIOGENOLOGY

Fertility and Whelping Complications in Bitches Following Correction of Vaginal Abnormalities

Moxon R, England GCW.

Veterinary Record 2011; 168:642-644.

This retrospective study compared fertility and whelping ease between 37 bitches with a history of surgically repaired vaginal abnormalities and 37 age- and breed-matched control bitches. Labrador retrievers were over-represented in the affected group. The 37 affected bitches were further

defined as having had mild, moderate, or severe vaginal abnormalities. Parameters evaluated included pregnancy rate, litter size, and type of intervention at the time of whelping. There was no demonstrated difference in fertility or whelping ease between the 2 groups. However, when comparing within the affected group, pregnancy rate was significantly lower for bitches with severe abnormalities compared to those with mild abnormalities. Severely affected bitches were also significantly more likely to need a cesarean section. The authors hypothesize that the latter finding may be due to enhanced veterinary oversight of bitches with a history of severe vaginal abnormalities.

Margaret V. Root Kustritz, DVM, PhD, Diplomate ACT,
University of Minnesota

CRITICAL POINTS

- Vaginal abnormalities may be mild (easily broken down digitally or requiring no repair), moderate (repaired under sedation but without need for an episiotomy), or severe (repaired under anesthesia with an episiotomy).
- Labrador retrievers were over-represented in this study but relatedness of affected bitches was not reported.
- After appropriate repair of vaginal abnormalities, bitches may be bred successfully. However, those bitches with severe abnormalities may have difficulty conceiving and may be more likely to require cesarean section.



NUTRITION

Imprecision When Using Measuring Cups to Weigh Out Extruded Dry Kibbled Food

German AJ, Holden SL, Mason SL, et al.

Journal of Animal Physiology and Animal Nutrition 2011; 95:368-373.

This study examined the precision and accuracy of using measuring cups to portion dry pet foods. The investigators used 6 different dry pet foods (4 cat foods and 2 dog foods) from 3 manufacturers. Each food was measured using measuring cups

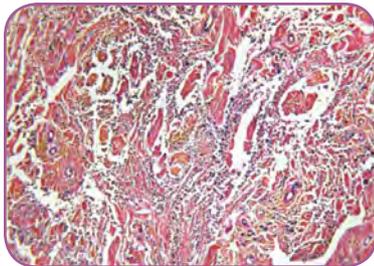
supplied by the manufacturer and the portion was weighed on an electronic scale. Twelve different trials were run where the type of diet, portion size, number of repetitions, and number of participants varied. Precision (closeness of the measured values when compared to each other) was poor in all trials (coefficient of variation 2%–15% intrasubject and 2%–28% intersubject).

Accuracy (closeness of the measured value compared to the true value) ranged from an 18% underestimate to an 80% overestimate. Over time, even small errors in measuring feeding portions can have a substantial impact on energy balance. Dry pet foods are relatively energy dense and errors in measurement can contribute to inappropriate weight gain or failure of a weight reduction program.

Kathryn E. Michel, DVM, MS, Diplomate ACVN,
University of Pennsylvania

CRITICAL POINTS

- Using measuring cups to portion dry commercial pet foods was found to be both imprecise and inaccurate.
- Dry pet foods can be calorically dense and even small errors in measurement over time can have substantial impact on energy balance.
- These findings are particularly relevant with regard to pets prone to obesity or those enrolled in a weight loss program.
- Use of an accurate kitchen scale is one means of ensuring accurate measurement of dry food and should be considered in cases where the control of the patient's caloric intake is paramount.



CYTOLOGY & ONCOLOGY

Ultrasound-Guided Cytology of Spleen and Liver: A Prognostic Tool in Canine Cutaneous Mast Cell Tumor

Stefanello D, Valenti P, Faverzani S, et al.

Journal of Veterinary Internal Medicine 2009; 23:1051–1057.

In this paper, 52 dogs with mast cell tumors (MCTs) underwent ultrasound evaluation and fine-needle aspiration (FNA) with cytology of the liver and spleen. Cytologic criteria of MCT infiltration included clustering of well-differentiated

most cells, large numbers of well-differentiated mast cells, or mast cells with atypical morphology (pleomorphic and poorly granulated). The dogs were separated into 2 groups: those without MCT infiltration into either the liver or spleen ($n = 42$) and those with infiltration into 1 or both organs ($n = 10$). Survival time between these groups was significantly different; 733 days (without MCT infiltration) versus 34 days (infiltration into liver and/or spleen) ($P < 0.0001$). This dramatic difference in survival time supports that the cytologic findings were consistent with systemic MCT. Survival time between dogs with normal versus abnormal ultrasound findings was not significant, suggesting that cytologic evaluation of the spleen and liver may be indicated for complete staging of dogs with MCT regardless of the ultrasonographic findings.

Correlation of Ultrasound Findings, Liver and Spleen Cytology, and Prognosis in the Clinical Staging of High Metastatic Risk Canine Mast Cell Tumors

Book AP, Fidel J, Wills T, et al.

Veterinary Radiology and Ultrasound 2011; 52:548–554.

This study evaluated 19 dogs with aggressive grade II or III MCT treated with vinblastine/CCNU (lomustine) chemotherapy. The focus was to:

- Determine the specificity and sensitivity of ultrasound findings to determine MCT infiltration into the liver and/or spleen
- Determine MCT infiltration into the liver/spleen using cytologic assessment.

Seven dogs had MCT infiltration, and the sensitivity of ultrasound for detection of infiltration was 43% and 0% for the spleen and liver, respectively. Dogs with cytologic determination of infiltration of the spleen or liver had significantly shorter survival times than dogs without infiltration (100 versus 291 days, $P < 0.0001$). This clinical survival corroborated the cytologic finding of systemic disease. Due to the poor sensitivity of ultrasound for detecting organ infiltration in cases where it was confirmed with cytology and the decreased survival associated with identified infiltration, FNA and cytology of the spleen and liver are recommended for staging dogs with MCT thought to be at high risk for metastasis.

Laura D. Garrett, DVM, Diplomate ACVIM (Oncology), University of Illinois

CRITICAL POINTS

- These 2 papers investigated a topic of ongoing debate: the benefit of FNA/cytology to stage dogs with MCTs, but with livers and spleens that appeared normal per ultrasound.
- Mast cells can be found in moderate numbers in normal canine livers and spleens, and increased numbers found in splenic aspirates from dogs with MCT did not correlate with systemic behavior in a previous study (Cytological comparison of fine-needle aspirates of liver and spleen of normal dogs and of dogs with cutaneous mast cell tumours and an ultrasonographically normal appearing liver and spleen; Finora K, Leibman NF, Fettman MJ, et al; *Vet Comp Oncol* 2006; 4:178–183).
- The 2 studies discussed above supported the use of FNA and cytology to stage dogs with MCT (especially those at high risk for metastasis) and help determine survival time.



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SMALL MAMMALS/EXOTICS

***Mycoplasma pulmonis* in Rats**

Graham JE, Schoeb TR.

Journal of Exotic Pet Medicine 2011; 20(4):270-276.

This article is an excellent review of a common disease of pet rats, murine respiratory mycoplasmosis (MRM). Incidence of this organism is high in both pet rat and wild rat populations. A number of factors increase disease severity, including nutritional deficiencies, poor husbandry, immune suppression due to other disease processes and concurrent infection with other viruses/bacteria, most specifically the Sialodacryoadenitis and Sendai viruses, and cilia-associated respiratory bacillus. Clinical signs may include:

- Sneezing
- Torticollis (secondary to otitis interna)
- Nasal discharge
- Weight loss
- Respiratory distress
- Depression

Specific pathogen testing is available, but seldom performed. The authors suggest that pet rats presenting with signs consistent with respiratory disease be treated for a mixed infection, with the assumption that MRM is a copathogen.

Antibiotics commonly used to treat MRM include:

- Fluoroquinolones
- Aminoglycosides
- Tetracyclines
- Chloramphenicol
- Macrolides

Combination therapy is suggested, and is also recommended by this author (enrofloxacin, 10 mg/kg PO Q 12 H, and doxycycline hyclate, 5 mg/kg PO Q 12 H). Severely affected patients may require prolonged treatment and may frequently relapse. Other treatment options include low levels of short-acting steroids, nonsteroidal antiinflammatory agents, bronchodilators, and expectorants. Treatment via nebulization can also be considered.

Angela Lennox, DVM, Diplomate ABVP (Avian), Avian and Exotic Animal Clinic, Indianapolis, Indiana

CRITICAL POINTS

- Murine respiratory mycoplasmosis is a chronic progressive respiratory disease that has variable signs and severity.
- Most infections exist concurrently with other bacterial and/or viral pathogens.
- Due to widespread incidence, most cases are diagnosed based on clinical presentation, although specific pathogen testing is available.
- Treatment is geared toward control of primary and secondary infectious agents and associated inflammation.

ENDOCRINOLOGY

Outcome of Radioactive Iodine Therapy in Cats Receiving Recent Methimazole Therapy

Oman R, Lunn KF.

Journal of Veterinary Internal Medicine 2011; 25:684 (abstract).

Radioactive iodine (^{131}I) is commonly used for treatment of hyperthyroidism in cats. In order to assess the effects of treatment on renal function, many cats receive methimazole prior to ^{131}I treatment. It has been suggested that recent withdrawal of methimazole prior to ^{131}I may:

- Increase the risk of hypothyroidism
- Inhibit the response to ^{131}I treatment
- Have no effect.

This retrospective study reviewed the records of 60 hyperthyroid cats that received ^{131}I ; 40 cats that received ^{131}I within 1 day of methimazole discontinuation and 20 that had received ^{131}I 5 or more days after methimazole was discontinued.

The serum T_4 (thyroxine) concentrations were evaluated 7 to 14 days post ^{131}I treatment (see **Table**). These results were compared with a Fisher's exact test and there was no difference between results. These findings indicate that discontinuing methimazole treatment within 1 day of ^{131}I treatment does not inhibit response to this therapy.

TABLE. THYROXINE CONCENTRATIONS 7 TO 14 DAYS POST RADIOACTIVE IODINE THERAPY

Study Groups	Low T_4	Normal T_4	Elevated T_4
40 cats: Discontinued methimazole within 1 day of beginning ^{131}I therapy	20 (50%)	17 (42.5%)	3 (7.5%)
14 cats: Discontinued methimazole 5 or more days prior to beginning ^{131}I therapy	8 (57%)	5 (36%)	1 (7%)

Gregory F. Grauer, DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine), Kansas State University

CRITICAL POINTS

- To assess the effects of ^{131}I on renal function, many cats receive methimazole prior to ^{131}I treatment.
- It has been suggested that recent withdrawal (≤ 1 day) of methimazole prior to ^{131}I treatment might be detrimental to the cat's treatment.
- The results of this study (**Table**) indicated that discontinuing methimazole in a 1-day time frame did not inhibit response to therapy.