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Latest papers:

J Vet Intern Med. 2010 Mar 22;: 20337921 Cit:1

Evaluation of a Therapeutic Diet for Feline Degenerative Joint Disease.

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Background: Feline degenerative joint disease (DJD) is common and there are no approved therapies for the alleviation of the associated pain. Objective: To test a diet high in eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA) content and supplemented with green-lipped mussel extract and glucosamine/chondroitin sulfate (test-diet) for its pain-relieving and activity-enhancing effects in cats with painful, mobility-impairing DJD over a 9-week period. Animals: Forty client-owned cats. Methods: Randomized, controlled, blinded, parallel group, prospective clinical study. Cats with no detectable systemic disease, and with at least 1 appendicular joint with radiographic evidence of DJD where manipulation elicited an aversive response were included. Cats were randomly allocated to the test-diet or control diet (C-diet). Outcome measures were subjective owner and veterinarian assessments, and objective activity monitoring (accelerometry). Nonparametric statistics were used to evaluate changes within and between groups for both subjective and objective data, and locally weighted scatterplot smoothing regression analysis was used to predict activity changes. Results: The primary objective outcome measures indicated that activity declined significantly (P <.001) in the C-diet group, significantly increased (P <.001) in the test-diet group and there was a significant difference between the groups (P <.001). Conclusion and Clinical Importance: A diet high in EPA and DHA and supplemented with green-lipped mussel extract and glucosamine/chondroitin sulfate improved objective measures of mobility. Dietary modulation might be 1 method to use to improve mobility in cats with DJD-associated pain.

Vet Surg. 2010 Feb ;39 (2):224-5 20210970

Preparation of canine and feline cadavers for surgical laboratories.

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Most cited papers:

J Vet Pharmacol Ther. 2005 Oct ;28 (5):453-60 16207308 Cit:29

PK-PD modeling of buprenorphine in cats: intravenous and oral transmucosal administration.

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The pharmacokinetics and thermal antinociceptive effects of buprenorphine after intravenous (i.v.) or oral transmucosal (OTM) administration were studied in six adult cats. Plasma buprenorphine concentrations were measured using radioimmunoassay in a crossover study after a dose of 20 microg/kg given by the i.v. or OTM route. Oral pH was measured. Blood for drug analyses was collected before, and at 1, 2, 4, 6, 10, 15, 30, and 60 min and at 2, 4, 6, 8, 12, and 24 h after treatment. Thermal thresholds were measured before treatment, then following treatment every 30 min to 6 h, every 1 hour to 12 h and at 24 hours postadministration. Plasma buprenorphine concentration effect relationships were analyzed using a log-linear effect model. Oral pH was 9 in each cat. Peak plasma buprenorphine concentration was lower and occurred later in the OTM group but median bioavailability was 116.3%. Thermal thresholds increased significantly between 30 and 360 min in both groups. Peak effect was at 90 min and there was no difference at any time between the two groups. There was distinct hysteresis between plasma drug

concentration and effect in both groups. Overall, OTM administration of buprenorphine is as effective as i.v. treatment and offers a simple, noninvasive method of administration which produces thermal antinociception for up to 6 h in cats.

J Vet Pharmacol Ther. 2005 Oct ;28 (5):461-6 16207309 Cit:15

The effects of inhibiting cytochrome P450 3A, p-glycoprotein, and gastric acid secretion on the oral bioavailability of methadone in dogs.

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Methadone is an opioid, which has a high oral bioavailability (>70%) and a long elimination half-life (>20 h) in human beings. The purpose of this study was to evaluate the effects of ketoconazole [a CYP3A and p-glycoprotein (p-gp) inhibitor] and omeprazole (an H+,K(+)-ATPase proton-pump inhibitor) on oral methadone bioavailability in dogs. Six healthy dogs were used in a crossover design. Methadone was administered i.v.(1 mg/kg), orally (2 mg/kg), again orally following oral ketoconazole (10 mg/kg q12 h for two doses), and following omeprazole (1 mg/kg p.o. q12 h for five doses). Plasma concentrations of methadone were analyzed by high-pressure liquid chromatography or fluorescence polarization immunoassay. The mean +/- SD for the elimination half-life, volume of distribution, and clearance were 1.75 +/- 0.25 h, 3.46 +/- 1.09 L/kg, and 25.14 +/- 9.79 mL/min.kg, respectively following i.v. administration. Methadone was not detected in any sample following oral administration alone or following oral administration with omeprazole. Following administration with ketoconazole, detectable concentrations of methadone were present in one dog with a 29% bioavailability. MDR-1 genotyping, encoding p-gp, was normal in all dogs. In contrast to its pharmacokinetics humans, methadone has a short elimination half-life, rapid clearance, and low oral bioavailability in dogs and the extent of absorption is not affected by inhibition of CYP3A, p-gp, and gastric acid secretion.

Vet Rec. 2003 Oct 11;153 (15):462-5 14584576 Cit:15

Changes in thermal threshold response in eight cats after administration of buprenorphine, butorphanol and morphine.

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Thermal thresholds were measured in eight cats after the intramuscular administration of morphine (0.2 mg/kg), buprenorphine (0.01 mg/kg) or butorphanol (0.2 mg/kg), doses commonly used in clinical practice; 0.9 per cent saline (0.3 ml) was injected as a control. Groups of six cats were used and each cat participated in at least two treatments, according to a randomised design. The investigator was blinded to the treatments. The thermal thresholds were measured with a testing device developed specifically for cats, and measurements were made before and five, 30, 45 and 60 minutes and two, four, six, 12 and 24 hours after the injections. There was no significant change in thermal threshold after the injection of saline. With butorphanol, the threshold was increased only at five minutes after the injection and was decreased two hours after the injection; with morphine it was increased from between four and six hours after the injection, and with buprenorphine it was increased from between four and 12 hours after the injection.

J Vet Pharmacol Ther. 2005 Aug ;28 (4):371-6 16050817 Cit:14

Pharmacokinetics of morphine and plasma concentrations of morphine-6-glucuronide following morphine administration to dogs.

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The purpose of this study was to evaluate the pharmacokinetics of morphine and morphine-6-glucuronide (M-6-G) following morphine administered intravenously and orally to dogs in a randomized crossover design. Six healthy 3-4-year-old Beagle dogs were administered morphine sulfate (0.5 mg/kg) as an i.v. bolus and extended release tablets were administered orally as whole tablets (1.6 +/- 0.1 mg/kg) in a randomized crossover design. Plasma

concentrations of morphine and M-6-G were determined using high-pressure liquid chromatography and electrochemical coulometric detection. Following i.v. administration all dogs exhibited dysphoria and sedation, and four or six dogs vomited. Mean +/- SE values for half-life, apparent volume of distribution, and clearance after i.v. administration were 1.16 +/- 0.15 h, 4.55 +/- 0.17 L/kg, and 62.46 +/- 10.44 mL/min/kg, respectively. One dog vomited following oral administration and was excluded from the oral analysis. Oral bioavailability was 5% as determined from naïve-averaged analysis. The M-6-G was not detected in any plasma samples following oral or i.v. administration of morphine at a 25 ng/mL the limit of quantification. Computer simulations concluded morphine sulfate administered 0.5 mg/kg intravenously every 2 h would maintain morphine plasma concentrations consistent with analgesic plasma concentrations in humans. Oral morphine is poorly and erratically absorbed in dogs.

N Z Vet J. 2005 Jun ;53 (3):193-202 16012589 Cit:11

Current attitudes to, and use of, peri-operative analgesia in dogs and cats by veterinarians in New Zealand.

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AIM: To investigate the attitudes of veterinary practitioners in New Zealand to pain and analgesia, and their use of analgesic drugs, in dogs and cats. METHODS: A questionnaire posted to 1,200 practising veterinarians was used to gather information about the use of analgesia in dogs and cats, assessment of pain, attitudes to pain relief, analgesic drugs and procedures used, factors affecting choice of analgesic agent, and veterinary demographics, continuing education and staffing. RESULTS: Three hundred and twenty questionnaires with useable data were returned, a response rate of 28%. Male and female veterinarians were evenly represented. The analgesic agents most commonly used were morphine (opioids) and carprofen (a non-steroidal anti-inflammatory drug; NSAID). Use of peri-operative pain relief ranged from 50% for castration of cats to 91% for fracture repair in dogs. For most procedures, female veterinarians scored pain at a significantly higher level than their male colleagues. Fifty-eight percent of respondents considered their knowledge in the area of assessment and treatment of pain was adequate. CONCLUSIONS: This survey was considered representative of veterinarians working in companion animal practice in New Zealand. Results indicated a relatively high use of peri-operative analgesia, including both pre-emptive and multi-modal analgesia, in cats and dogs, although there was still some disparity between the perception of how painful a procedure was and the consequent use of pain relief. CLINICAL RELEVANCE: The establishment of current attitudes and practices indicates to practising veterinarians how their own use of analgesics compares with that of their colleagues. It also provides information to educators on potential areas of focus, given that 42% of respondents felt their knowledge in the area of assessment and treatment of pain was inadequate.

J Vet Intern Med. ;22 (1):53-9 18289289 Cit:5

Amantadine in a multimodal analgesic regimen for alleviation of refractory osteoarthritis pain in dogs.

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Background: Nonsteroidal anti-inflammatory drugs (NSAIDs) do not always provide sufficient pain relief in dogs with osteoarthritis (OA). Hypothesis: The use of amantadine in addition to NSAID therapy will provide improved pain relief when compared with the use of nonsteroidal analgesics alone in naturally occurring OA in dogs. Animals: Thirty-one client-owned dogs with pelvic limb lameness despite the administration of an NSAID. Methods: The study was randomized, blinded, and placebo controlled with parallel groups (days 21-42). On day 0, analgesic medications were discontinued. On day 7, all dogs received meloxicam for 5 weeks. On day 21, all dogs received amantadine (3-5 mg/kg once daily per os) or placebo for 21 days, in addition to receiving meloxicam. Assessments were performed before the study and on days 7, 21, and 42. Primary outcome measures were blinded owner assessments of activity using client-specific outcome measures (CSOM) on days 0, 7, 21, and 42. Data were analyzed by a mixed model approach. Results: For CSOM activity, there was a significant time by treatment effect (P=.009). On the basis of the

planned post hoc t-tests of postrandomization means, there was a significant difference between treatment groups on day 42 (P=.030), with the amantadine group being more active. Conclusions and Clinical Importance: In dogs with osteoarthritic pain refractory to an NSAID, physical activity is improved by the addition of amantadine. Amantadine might be a useful adjunct therapy for the clinical management of canine osteoarthritic pain.

J Small Anim Pract. 2003 Mar ;44 (3):135-8 12653330 Cit:3

Surgical treatment of right-sided renal lymphoma with invasion of the caudal vena cava.

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An eight-year-old, male castrated basset hound presenting with a three-month history of lethargy was examined. Diagnostic tests including radiography and ultrasonography showed a right-sided renal mass. A 99mTc diethylenetriamine penta-acetic acid scan demonstrated that this kidney was non-functional. At surgery, invasion of the caudal vena cava was found, and the renal segment of the vena cava and the right kidney were resected. The left renal vein was anastomosed to the more proximal vena cava using a polytetrafluoroethylene graft, and the dog recovered well. Two days postsurgery, the dog suffered an acute episode of aspiration pneumonia and was euthanased. The renal mass was diagnosed as lymphoma on histopathology.

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Evaluation of a Therapeutic Diet for Feline Degenerative Joint Disease.

B D X Lascelles, V Depuy, A Thomson, B Hansen, D J Marcellin-Little, V Biourge, J E Bauer

Comparative Pain Research Laboratory, Department of Clinical Science, College of Veterinary Medicine, North Carolina State University, Raleigh, NC.

Background: Feline degenerative joint disease (DJD) is common and there are no approved therapies for the alleviation of the associated pain. Objective: To test a diet high in eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA) content and supplemented with green-lipped mussel extract and glucosamine/chondroitin sulfate (test-diet) for its pain-relieving and activity-enhancing effects in cats with painful, mobility-impairing DJD over a 9-week period. Animals: Forty client-owned cats. Methods: Randomized, controlled, blinded, parallel group, prospective clinical study. Cats with no detectable systemic disease, and with at least 1 appendicular joint with radiographic evidence of DJD where manipulation elicited an aversive response were included. Cats were randomly allocated to the test-diet or control diet (C-diet). Outcome measures were subjective owner and veterinarian assessments, and objective activity monitoring (accelerometry). Nonparametric statistics were used to evaluate changes within and between groups for both subjective and objective data, and locally weighted scatterplot smoothing regression analysis was used to predict activity changes. Results: The primary objective outcome measures indicated that activity declined significantly (P <.001) in the C-diet group, significantly increased (P <.001) in the test-diet group and there was a significant difference between the groups (P <.001). Conclusion and Clinical Importance: A diet high in EPA and DHA and supplemented with green-lipped mussel extract and glucosamine/chondroitin sulfate improved objective measures of mobility. Dietary modulation might be 1 method to use to improve mobility in cats with DJD-associated pain.

Vet Rec. 2010 Feb 20;166 (8):226-30 20173106 Cit:1

Review of the safety and efficacy of long-term NSAID use in the treatment of canine osteoarthritis.

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The published, peer-reviewed literature was systematically searched for information on the safety and efficacy of long-term (defined as 28 days or more of continuous therapy) NSAID use in the treatment of canine osteoarthritis. Online databases were reviewed in June 2008 and papers were selected based on their relevance. Fifteen papers were identified and evaluated. Six of seven papers indicated a benefit of long-term treatment over short-term treatment in terms of the reduction of clinical signs or lameness; one study showed no benefit. Fourteen papers evaluated safety

with calculated experimental (adverse) event rates (EER) between 0 and 0.31, but there was no correlation between study length and EER (rs=-0.109, P=0.793). The balance of evidence for the efficacy of NSAIDs supports longer-term use of these agents for increased clinical effect. There is no indication in the literature that such an approach is associated with a reduction in safety, although robust data on the safety of long-term NSAID use are lacking in large numbers of dogs.

Vet Rec. 2007 Apr 14;160 (15):512-6 17435097 Cit:1

Kinetic evaluation of normal walking and jumping in cats, using a pressure-sensitive walkway.

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The kinetic parameters of the limbs of 23 normal, client-owned cats were evaluated by encouraging them to walk and jump normally on a pressure-sensitive walkway. Each cat was encouraged to walk across the walkway five times over a period of 30 to 45 minutes (by using food, toys, the owner's presence and a purpose-built tunnel) at a target speed of 0.6 m/s (and an acceleration of less than +/- 0.1 m/s(2)). They were then encouraged to jump on to the walkway from a height of 1 m five times at five-minute intervals. The kinetic parameters of peak vertical force (PVF) and vertical impulse (VI) were measured for each limb (the forelimbs only for the jumps), and expressed as a percentage of bodyweight (PVF(%BW) and VI(%BW/S)). Fifteen of the 23 cats satisfactorily completed three to five walks and two to five jumps that could be analysed. There were no significant differences between the PVF or VI of the left and right limbs, but both parameters were significantly greater for the forelimbs than the hindlimbs (P<0.001) for the walking data. The mean (sd) PVF(%BW) for the forelimbs and hindlimbs were 48.2 (6.0) and 38.3 (4.0), respectively, and the mean VI(%BW/s) were 16.9 (3.2) and 13.3 (2.8). Jumping down generated significantly greater PVF (P<0.01) and slightly greater VI than during walking; there were no significant differences between the left and right forelimbs. The mean PVF(%BW) was 148.9 (16.4) and the mean VI(%BW/s) was 18.1 (4.3).