C/E for the one who doesn't have time for C/E

"Pearls" of Veterinary Medicine

THE CAPSULE REPORT® FOR VETERINARIANS

Trusted By The Profession Since 1981

Volume 35 Number 11 February 2017

AT A GLANCE

The role of *Wolbachia* in heartworm disease

Wolbachia are intracellular bacteria that infect numerous species of filarial worms including heartworms. Many contend that these friendly inhabitants (endosymbionts) play a role in the pathogenesis of diseases caused by heartworms and other filarids. Contention is that host immune responses directed at *Wolbachia* can actually go awry and enhance the disease process in heartworm infections. Some also contend that elimination of *Wolbachia* spp. from heartworms may affect the survival of adult heartworms and microfilariae, the ability of microfilariae to infect and develop within mosquito vectors, and may decrease the host's errant immunologic responses when adult worms are killed or die. At present, there appears to be evidence that pretreatment of heartworm infected dogs with doxycycline at the rate of 20 mg/kg/day (10 mg/kg, BID) for one month prior to administration of melarsomine dihydrochloride may decrease the severity of post-treatment thromboembolic and immunopathologic events. Data also suggest that administration of doxycycline (together with a microfilaricide) also can aid in the elimination of microfilariae from heartworm infected dogs and can render microfilariae noninfectious to mosquitoes.

Byron Blagburn, BS, MS, PhD
100th WI VMA Conf, 10:15

Benefits of discussing pet health

A new survey of 2,000 pet owners from the Human Animal Bond Research Initiative Foundation (HABRI) and AAHA suggests that pet owners who know the health benefits of owning pets are more motivated to provide veterinary care for them, according to a release from HABRI. When people find out that pets improve heart health, decrease stress, help alleviate depression and address specific conditions that include autism, PTSD and Alzheimer's, they become more focused on caring for their pet's health. According to the release, 89% of survey respondents said they were more likely to take better care of their pet after learning about the health benefits of the human-animal bond. More than 90% said they were more likely to maintain a pet's health, including keeping up with vaccines and preventive medicine. According to the release, 62% of survey respondents said the newfound information made them ***less likely to skip taking a pet to the veterinarian***. Human-animal bond education can boost a veterinarian's approval ratings as well.

DVM News Mag, Oct 2016

Core vaccines, new recommendations

Combination product administered as: MLV *or* Recombinant Canine Distemper Virus + MLV Parvovirus + MLV Adenovirus-2. *OPTION*: May also include MLV Canine Parainfluenza Virus. Three (to 4) doses are recommended between 6 and 18-20 weeks of age. Example: 8 weeks; and 12 weeks; 16 weeks, AND, a final dose at 18 to 20 weeks of age. (NEW) NOTE: Serologic data (unpublished: U of Wisconsin) on young dogs (n = >1200) indicates ***maternally derived antibody interferes with both Distemper and Parvovirus immunization in approx. 15% dogs at 16 weeks of age***. All dogs studied were personally owned pets examined in private practice. Administer a single dose (of a combination product) not later than 1 year following the last dose in the initial series. NOTE: a minimum interval of 2 weeks between any 2 doses of vaccine is recommended. Administer subsequent boosters every 3 years (or longer).

Richard B. Ford, DVM, MS
125th SD VMA Conf, 08:16

Trazadone to hospitalized dogs

To evaluate the effects of trazodone treatment on behavioral signs of stress in hospitalized dogs, stress-related signs and behaviors were evaluated in hospitalized dogs

The Capsule Report® is published monthly for veterinarians who wish to maintain high standards of practice
Copyright by William L. Collins, DVM© 64660 Picard Ct, Desert Hot Springs, CA 92240; (760) 671-6847, Fax (661) 821-8927

that did (n = 60) or did not (60) receive trazodone. Lip licking, panting, and whining were reduced in the trazodone-treated dogs, but not in the matched, untreated dogs, and median numbers of stress-related behaviors and of frenetic and freeze behaviors were significantly decreased in trazodone-treated dogs after drug administration. Odds of reduced panting and reduced frenetic behaviors for trazodone-treated dogs were >2 times those for untreated dogs. Results indicated that trazodone administration ***reduces stress-related signs and behaviors in hospitalized dogs***.

Shana E. Gilbert-Gregory, VMD et al.
JAVMA, Dec 1, 2016

Strict rest as an option in disc disease

Despite this surgeon's skills as a neurosurgeon, he tends to use strict rest the majority of the time (cervical and thoracolumbar disease). Strict rest is defined in this article as 4 weeks of crate rest. Crate rest means the pet is in a crate or confined area at all times. The pet should at no time be wandering around unsupervised. If the pet is out of the crate it should be in the owner's arms or sitting next to the owner. This is followed by a slow return to activity using controlled low impact activity (leash walks) over another 2-4 weeks. Studies demonstrate paraplegic and paraparetic patients have ***success rates as high as 81%-84%*** from conservative management alone. To put that into perspective, a little more than 8 out of 10 dogs will recover from paralysis of their pelvic limbs through conservative management alone. Duration of clinical signs has not been shown to affect surgical outcome: Studies show that assuming the condition doesn't progress to deep pain negative status, giving the patient a chance to recover through strict rest without surgery has no effect on the future surgical outcome. As you can see, conservative therapy is clearly a treatment force to be reckoned with. It is a cheap and effective tool that can truly help pets (and clients) through a very serious condition. The author hopes this article has shown you the wide benefits of strict crate rest as a treatment for intervertebral disc herniation. Neurosurgery has its place and should be approached aggressively when necessary, but even great neurosurgeons have to admit that when used in the correct circumstances, strict rest can be just as effective as surgery with significantly less risk.

Robert Powers-Davis, DVM, DACVIM
So Cal VMA Pulse, Dec 2016

Reducing pain in osteosarcoma

Patients with osteolytic bone lesions (osteosarcoma patients) are often the most challenging pain management cases of all. Most of these dogs present in unrelenting pain from the presence of the bone cancer itself. They are often large breed dogs that, in many instances, have other very significant arthritic pain and myofascial pain present. In these patients, when amputation is not a consideration, in addition to the usual tools used, this author adds IV bisphosphonate pamidronate (Aredia). This medication, when administered in a slow IV infusion (1-2 mg/kg in 250 ml 0.9% NaCl over 2 hours), has the ability to block the pathologic osteolytic process of the cancer and results in ***significant and rapid pain reduction in the osteosarcoma patien***t. Generally, the author expects to see a response within the first week of treatment. Although radiation therapy is a definite consideration in palliation of the pain of bone cancer, not all locations have radiation centers within a reasonable distance. Pamidronate has afforded this clinician with a viable alternative to both amputation and radiation and has resulted in what significant improvement in not only quality of life, but significant additional length of life for osteosarcoma patients.

Kathy L. Mitchner, DVM, CVMA
82nd AAHA Conf, 03:15

Atopy, nutritional supplements

A recent randomized controlled trial in atopic dogs indicated that vitamin E supplementation at a dose of 8.1 IU/kg, once a day resulted in more clinical improvement compared with control dogs. There was less erythema, lichenification, excoriation, and alopecia in the vitamin E-treated group. Another recent study investigated the effect of vitamin D supplementation in atopic dogs. At a daily dose of 1500 IU/kg of cholecalciferol for 8 weeks, pruritus was significantly reduced compared to placebo. Ionized calcium was also measured at 5 time points and no hypercalcemia was noted despite the high dose (considered toxic). Relatively few animals have been studied in these and other trials. In humans a recent meta-analysis showed no convincing evidence that nutritional supplements improved signs of eczema associated with atopy with the exception of fish oil.

Craig Datz, DVM, MS, DABVP
20th ABVP Symp, 11:15

Minimizing complications of melarsomine

It's essential to administer the proper amount of medication. Overdosing can potentiate pulmonary edema and, possibly, death. Underdosing by as little as 10% can significantly reduce efficacy and prevent elimination of infection. The target site for injection is the epaxial muscle, a meaty muscle covered by fascia, with a good blood supply. If melarsomine is administered into a smaller muscle (e.g. a rear limb), significant and protracted lameness can develop. If administered into subcutaneous tissues, the formation of a sterile abscess is likely. Intravenous administration is fatal (always aspirate before injecting). Keep the dog standing during injection. Change the needle. A new needle hurts less, so the dog is less likely to move during injection. It also ensures that no drug is tracked through subcutaneous tissues, where it can cause inflammation and soreness. Use an appropriate needle size for each patient: a 1 1/2", 22-ga needle for large dogs, but consider using a 1", 23-ga needle for smaller dogs**.** After calculating the proper location and depth, insert the needle at a slight

angle; aspirate, then inject slowly. Stop the injection if needed. If the dog begins to squirm during the injection, stop, then restart when the dog is still again. Sedation is rarely needed, but is an option. Limit the dosage per site to 2 ccs. With larger volumes, split the dose into two injections. Apply pressure for about a minute after the needle is withdrawn. This helps prevent drug from seeping back into the subcutaneous tissues.

Stephen Jones, DVM
NAVC Clin Brf, 14:9

Budesonide for IBD

Budesonide offers an alternative to prednisone or prednisolone for the treatment of inflammatory bowel disease and possibly inflammatory liver diseases. It appears to have concentrated local effects; this makes it an attractive alternative therapy for inflammatory bowel disease, with equivalent efficacy when compared with prednisone in dogs. Although the published empiric dosage is 3 mg/m^2 once a day, this dose can still cause marked PU/PD and panting in some dogs and can completely suppress the HPA axis. Lower starting dosages (e.g., 1-2 mg/m^2 or 1-2 mg/30 kg [dogs]; 0.5-0.75 mg [cats]) may be better-tolerated and can be titrated to clinical effect.

Lauren Trepanier, DVM, PhD, DACVIM, DACVCP
NAVC Clin Brf, 13:12

Pain management in the cat, pre-op

Pre-op, combine a sedative and an opioid (e.g. hydromorphone & acepromazine). Acepromazine potentiates the effects of the opioid (but ace is NOT analgesic, this is important!) Sidebar - consider carefully the use of anticholinergics - we no longer use them pre-op. Butorphanol has NO PLACE in a perioperative protocol. As a pre-med, the analgesic effects are GONE just in time for the first stroke of the scalpel. It diminishes effectiveness of any subsequent delivery of pure mu opiate, and it is expensive (by comparison) to "real" analgesics. It is still in use due to complacency - - not a good excuse.

Robin Downing, DVM, CVPP, CCRP, DAAPM
Am Ass'n Fel Pract Conf, 09:14

In-clinic sedation options

Use low-stress handling techniques to achieve IM injection for best results. The following protocols are for anxious but not aggressive dogs. Choose one of the following options. Combine medications in one syringe and administer IM. a) Butorphanol (0.2-0.4 mg/kg, IM) + Dexmedetomidine (5-7 µg/kg, IM). b) Butorphanol (0.2 mg/kg, IM) + dexmedetomidine (3-5 µg/kg, IM) + acepromazine (0.01-0.02 mg/kg, IM). Combining an opioid with dexmedetomidine *and* acepromazine allows for lower doses of all three medications and produces very reliable sedation. c) Hydromorphone (0.1-0.2 mg/kg, IM) or morphine (0.5 mg/kg, IM) + acepromazine (0.01-0.03 mg/kg). d) Butorphanol (0.2-0.4 mg/kg, IM) +/- midazolam (0.2 mg/kg, IM) is appropriate for sedation of geriatric or ill patients. Avoid midazolam in sedation protocol if patient is healthy because of paradoxical excitation. A lateral saphenous catheter is often much less stressful for small dogs. They can be held on someone's lap (where they are used to being held) while another person slips a catheter into the back leg.

Heidi L. Shafford, DVM, PhD, DACVAA
N Amer Vet Conf, 01:15

Fluralaner to treat demodicosis

This paper demonstrates a good efficacy of weekly injection of doramectin SC. Remission was achieved in a majority (94.8%) of dogs treated. The use of a drug not registered to treat demodicosis weekly SC remains questionable because of the neurotoxic potential of macrocyclic lactones in dogs with the MDR1 mutation and the risk of local reaction. However, in this paper, side effects appear rare. Recently, the use of ***fluralaner to treat canine demodicosis*** was reported. This new protocol seems to be efficient; it is easy to use (1 oral tablet every 3 months), reasonably affordable, and safe.

Luc Beco, DVM, DECVD
NAVC Clin Brf, 14:2

Determining heartworm resistance

Currently we have no diagnostic test for resistance, so when a case comes in that looks like it might be resistant, a veterinarian is unable to easily confirm or refute whether resistance is there. To address this problem, these researchers created a ***decision tree*** to help practitioners make the distinction of whether they might have a resistant case. They recommend performing a microfilarial (MF) suppression test by taking a blood sample and determining the number of microfilariae present using a Knott's test then treating the dog with a microfilaricidal dose of ivermectin or milbemycin oxime. A week later, it is recommend to perform another MF count. In most studies, a very rapid and profound reduction in MF numbers was seen. Thus one should expect to see a reduction of greater than 75%, and typically 90% or higher. So if a practitioner sees less than a 75% reduction in MF, the case can be considered highly suspicious for resistance.

Drs. Ray Kaplan and Andy Moorhead
NAVC Clin Brf, Dec 2016

Diagnosing dermatophytes

A Wood's lamp can help you determine where to take culture samples; some dermatophyte strains glow a bright apple-green color along the hair shaft. Scale and debris typically glow green-blue. By the way, it's a ***myth that a Wood's lamp needs 5-10 minutes to warm up***. Delayed fluorescence is all a matter of perception and your eyes adjusting to the dark. Recent evidence suggests that infected arthrospores can be found numerous centimeters away from the obvious clinical lesions, Because of this, most cases that don't resolve spontaneously should be considered generalized and treated as such. Fungal culture is the author's diagnostic of choice, with dermatophyte test medium most reliable, inexpensive in-house method available. Dermatophyte cultures will grow in 7-14

days. Color change noted after 21 days is usually due to contaminants. The author recommends incubating the samples at 82º F, placing them next to a computer tower for warmth. The cultures are stored inside a plastic baggie with a moistened gauze square so the heat and humidity will encourage the fungus to grow. Check the samples daily for 2 weeks, then every other day for a total of 30 days. Check for 30 days just to make sure there isn't something slow-growing.

Melissa Hall, DVMDACVD
DVM News Mag, Dec 2016

The sit test for cruciate disease

The sit maneuver challenges the stability of the stifle. If the stifle is unstable, then painful stifle subluxation is produced, with the combination of tarsal and stifle flexion. Slow-motion videotape of these patients is particularly revealing in better understanding the postural adaptation. The characteristic of particular interest is the patient's lack of normal tarsal flexion during sitting required to protect the stifle from subluxation. The combination of tarsal flexion and weight bearing produces cranial thrust force. The force is restrained by the cranial cruciate ligament, but if torn, results in painful subluxation of the stifle joint. The stand-to-sit and even the sit-to-stand test are essentially functional cranial thrust evaluations. ***Clumsy asymmetrical sit posture*** can be a tip-off for underlying cruciate disease.

Randall fitch, DVM, MS, DACVS
81st AAHA Conf, 03:14

Pre-oxygenation, helpful?

Is there a proven benefit of pre-oxygenation before anesthesia? Most anesthesia nurses and anesthesiologists use it in hope that it denitrogenates the functional residual capacity of the lung and reduces the chances of cellular hypoxia, which occurs as induction drugs are delivered. However, there is little proof that it is valuable in helping these patients, especially when we have trouble getting oxygen to the lower airways, where gas exchanges actually occur.

Phil Zeltzman, DVM, DACVS, CVJ
Vet Pract News, 28:6

Anti-virals for FHV-1

In kittens with acute life-threatening upper respiratory infection, use of alpha interferon at 10,000 U/kg, SQ, daily for up to 2 weeks can be beneficial. Famciclovir is safer and more effective than acyclovir (can be toxic to cats) and is now being used for long-term therapy. One dose that has been used is 1/2 tablet of a generic 250 mg tablet (125 mg), PO, q8-12 hr. Depending on the size of the cat, this is about 30 mg/kg which appears to be the optimal dose. The drug is safe at up to 90 mg/kg, PO, q8hrs and so the dose should be increased if the initial response is suboptimal and FHV-1 is still suspected. Topical cidofovir (product for humans) can be used for the treatment of FHV-1 conjunctivitis twice daily and was effective in a controlled research project. The drug was easier to administer (twice daily) than idoxuridine or other anti-FHV-1 ocular therapies and does not cause as much irritation. This drug is available in some compounding pharmacies (www.rxfixer.com). However, it is now known that famciclovir is excreted in high levels in the tears for 4 hours after a dose and so topical treatment with anti-FHV-1 drugs may not be needed if famciclovir is prescribed.

Michael R. Lappin, DVM, PhD, DACVIM
Music City Vet Conf, 03:15

MRSA transmission

Fortunately, MRSA infections in small animal veterinary medicine continue to be relatively rare. Most cases of MRSA in dogs are associated with wound contamination, post-surgical complication, or other infections of opportunity rather than spontaneous bacterial folliculitis or superficial pyoderma. In nearly 100% of reported cases of MRSA infection in dogs, there is a ***human in the household or hospital*** that is a carrier or infected. Cats and horses may be more at risk for MRSA as it appears that *S. aureus* is better adapted to their microbiota. Whenever a veterinarian diagnoses a true MRSA in their clinic, there is a human case involved; further, there is potential for zoonotic transmission to themselves, personnel, and people in the household.

John C. Angus, DVM, DACVD
4th Derm For Vet, Oct 2016

Proton-pump inhibitors and CKD

Veterinarians often prescribe famotidine in patients with kidney disease, but the author questions if they should be. Studies have shown no evidence of mucosal erosion or ulceration in patients with chronic kidney disease. These patients are already receiving plenty of drugs, so why add to the burden? On top of this, proton-pump inhibitors administration in people has been associated with a higher risk of kidney disease. Overall, further study is needed to define utility in patients with renal issues.

Katie Tolbert, DVM, PhD, DACVIM
DVM News Mag, Oct 2016

Length of stay of thoracostomy tubes

In this study, indwelling thoracostomy tubes (TT)s induced minimal production of pleural fluid in healthy dogs, and the amount produced was much less than the generally accepted value of 2 mL/kg/d. Presence of a TT resulted in the development of pyothorax in most dogs; thus, an indwelling TT may act as a portal for bacterial entry. Pleural effusion and clinical signs of pyothorax developed 4 and 6 days, respectively, after TT placement. On the basis of these results, it is recommended that TTs be removed in clinical patients by day 4 after placement to decrease the risk for development of pyothorax.

Germaine C. Hung, DVM et al.
Am J Vet Res, Dec 2016Hemorrhagic diarrhea

Forwarding or Copying is a Violation of U.S. and International Copyright Laws