KNOW Heartworms Promotes Awareness of HARD, Prevention

KNOW Heartworms aims to educate veterinarians and cat owners about the real threat of feline heartworm disease, which reveals itself as HARD, and the importance of prevention. The American Heartworm Society and the American Association of Feline Practitioners have partnered together for this campaign, which is sponsored by Pfizer Animal Health.

The information and research on feline heartworm disease continues to evolve, and with it, the KNOW Heartworms campaign. This year, the KNOW Heartworms team continues to focus on educating veterinary teams and the cat-owning public about HARD (Heartworm Associated Respiratory Disease). In addition to promoting the five myths and misunderstandings, this newsletter focuses on the diagnostic issues surrounding feline heartworm disease.

Veterinarians will again be able to request an updated KNOW Heartworms clinic kit this summer, look for updates on www.knowheartworms.org. As with the more than 9,000 kits distributed to date, this new kit will contain valuable information for educating both veterinary practice teams and their clients. This kit is based on input from veterinary professionals who used last year’s kit and participated in a survey about the campaign as a whole. A couple of quotes from the survey:

“Thank you for this campaign. I have strongly believed for a long time that feline heartworm disease does not get the attention it deserves. Now I have research and numbers to discuss with clients, staff and colleagues. Information on HARD was eye-opening; I diagnosed a cat with this days after receiving the info.”

“I Know Heartworms] gave me the incentive to compose a PowerPoint presentation for my staff and reinforced my belief that feline heartworm disease is a real threat. I have really changed a lot of opinions on this disease – clients and staff.”

In the campaign’s first year, www.knowheartworms.org received thousands of unique visitors every month. Veterinary professionals should continue to visit the Web site, where many useful documents and collateral are available for download in the “For Veterinarians” section. All new materials produced will be posted here as well.

The KNOW Heartworms team will continue to reach out to the veterinary community and increase visibility through the media, building on last year’s 382 million media impressions. Thanks to all who have made a commitment to preventing this serious disease.
Inside & Out

Feline Heartworm Disease

Diagnosing feline heartworm infection is one of the more elusive and complicated aspects of the disease, and it prompts the most questions from practitioners. The American Heartworm Society’s “2007 Guidelines for the Diagnosis, Treatment and Prevention of Heartworm Infection in Cats” include recommendations on testing, and we hope the more than 450 online views per month prove practitioners are finding the information helpful. Diagnostics are certainly a good focus for this third KNOW Heartworms newsletter, because the disease is more prevalent than previously thought.

I currently practice at two clinics, both located in universally accepted heartworm-endemic southern states, Alabama and Texas. Convincing pet owners to administer year-round prevention is admittedly easier in these areas, but I believe we are effective because our entire team is knowledgeable about heartworm disease.

Although diagnosis is challenging, and current serology tests are far from perfect, it is important for practitioners to test for heartworm disease, both as evidence of the disease’s existence and as a basis for treating symptomatic cats. I myself was skeptical the disease even existed in cats and, as I described in the first KNOW Heartworms newsletter, my own study in the 1990s proved its true prevalence along the Texas Gulf Coast.

Other postmortem studies have also confirmed the existence of feline heartworm disease, but the present battle is to pinpoint the most accurate way of identifying an infection the moment a cat presents with symptoms. Currently, relatively few cats are tested, as only 40,000 heartworm tests are run each year on cats as opposed to 22 million canine heartworm tests. These low numbers can be attributed to the fact that fewer cats are seen by veterinarians and the lack of confidence of practitioners in the current testing modalities, as noted are more than 75 percent accurate. An important point to remember is that a negative antibody or antigen test does not rule out heartworm disease. A positive result to either test is significant.

The introduction of new heartworm tests will dramatically change the number of cats tested annually. A widely used FIV/FeLV point-of-care testing is being reformatted and a heartworm antigen test is being added. The number of cats tested each year will go from thousands to millions. It will be imperative for practitioners to have a thorough understanding of the heartworm life cycle and the role of both immature and adult worms in feline heartworm disease. A positive heartworm antigen test will indicate the cat has at least one female adult worm or the remnants of a female adult worm that died within a few months. A cat testing negative on an antigen test could still have immature worms or a male-only worm infection. Regardless of the test result, the cat should be placed on heartworm preventive.

As millions of cats are tested, seemingly healthy cats will turn up positive much to the dismay of the veterinarian and the pet owner. This is not an automatic death sentence as not all heartworm-positive cats are going to die suddenly. In fact, the opposite is true; most will survive the infection if given the chance. However, pet owners and veterinarians need to be attentive to any signs of respiratory distress in confirmed heartworm-positive cats and seek prompt veterinary medical care.

Jane Brunt, DVM
Past President, American Association of Feline Practitioners

As the spokesperson representing the American Association of Feline Practitioners, I’ve learned more about feline heartworm disease than I ever thought possible! There is certainly a lot to grasp to understand feline heartworms and the disease presentation, HARD (Heartworm Associated Respiratory Disease). Understanding the disease became even more challenging when discussing pathological and diagnostics, but the important thing to remember is how easy and necessary it is to prevent.

Our goal with this volume of KNOW Heartworms: Inside & Out is to explain and simplify diagnosing feline heartworm disease, bringing about a change in belief and practice. Once veterinarians across the nation are able to identify and confirm respiratory signs as a result of heartworms, many will realize what we’ve been saying all along: This disease is as serious as and as prevalent as FIV or FeLV, and we must prevent it.

AAFP is committed to raising awareness of feline heartworm disease, and I’m proud to say our new pet-owner-friendly Web site, www.carers.com, features information about feline heartworm disease in its Cat Health Topics section. As veterinarians, we must recognize the importance of pet owner education. Cat owners need to know that if their cat isn’t on prevention, their cat is at risk for feline heartworm disease or HARD. If a cat does develop the disease, the most likely person to first recognize the signs is the pet owner, not the veterinarian. We are responsible for alerting pet owners that the hairball or cough they think their cat has may be more than that. Of course, the easiest way to handle this situation is to avoid it altogether, and we can do this by administering prevention to all cats in areas where heartworm exists in dogs – indoor or outdoor, kitten or adult, long-haired or short-haired.

I’ve had the unfortunate experience of diagnosing cats with heartworms in my own practice. Few things are harder than telling a cat owner their beloved companion has an incurable disease, which would have been easily prevented.

When a cat presents with any of the signs of HARD: respiratory distress such as coughing or shallow respirations, vomiting, lethargy, weight loss or diarrhea, I include antigen and antibody testing and thoracic radiographs in my workup to help “rule out” HARD as the culprit. While negative serology results do not rule out heartworms, any positive test results confirms the cat has feline heartworm disease. If there are radiographic changes in the pulmonary arteries, I assess the complete blood count and recommend referral for a cardiac consultation. After testing, regardless of the result, I reiterate the need for prevention and treat the signs as indicated.

My hope is that someday soon we won’t need to discuss diagnosis or treatment because cases of feline heartworm disease will be rare – not an outrageous goal considering this disease is 100 percent preventable!

“AHS Educates Practitioners on Diagnosing Feline Heartworm Disease

“The number of cats tested each year will go from thousands to millions.” —Dr. Nelson

AAFP Committed to Heartworm Prevention

“As the spokesperson representing the American Association of Feline Practitioners, I’ve learned more about feline heartworm disease than I ever thought possible!” —Dr. Brunt

“ We are responsible for alerting pet owners that the hairball or cough they think their cat has may be more than that.” —Dr. Brunt
Technician Leads Charge for Prevention

Alison Gottlieb, BS, BVT, VTS (EEC) of Cedar Grove, N.J. is one veterinary technician who is passionate about spreading the word on feline heartworm disease. However, like many other veterinary professionals, she wasn’t always such an advocate for prevention.

Ali’s first job as a technician was at a cat practice in Baltimore. About 15 years ago, a 16-year-old new cat was dropped off at the practice. Sadly, “Gary,” as he was named, wasn’t the perfect picture of health. All his teeth had to be extracted, and he had a heart murmur. Additionally, the veterinarian tested Gary for heartworms — not a common test in the early ‘90s — only to find he was heartworm positive.

“From what I understood at the time, if a cat had heartworms, we didn’t treat it as we believed it was self-limiting. Cats were just left with asthma or lung damage,” Ali said. After a short stint as the practice’s cat, Gary went home with Ali. He lived many more happy years, but eventually succumbed to heart and liver disease.

Looking back, Ali said, owning a heartworm-positive cat, we didn’t treat it as we believed it was self-limiting. Cats were just left with asthma or lung damage,” Ali said. After a short stint as the practice’s cat, Gary went home with Ali. He lived many more happy years, but eventually succumbed to heart and liver disease.

Ali lectures to technicians all over the country and has heard just about every excuse for not preventing heartworms. In fact, she had one of her own: “I used to believe the argument that indoor cats were safe from heartworms since they have to be bitten by a mosquito to become infected. Then, last summer I found a mosquito in my house.” She added, “Unless you never open a door or a window, your cat isn’t safe inside.”

Additionally, Ali doesn’t see any downsides to using prevention on her cats. In fact, she even administers prevention every month to the five feral cats living in her backyard. “I squirt it on them when they are eating, it’s so easy to give,” Ali said. She is also involved in a mobile spay/neuter program and when the cats are under anesthesia she applies the prevention. She notes the benefits of products having not only protection against heartworms, but fleas, ear mites and other parasites.

Ali accepts that sometimes veterinarians are the hardest to convince that heartworms are a serious threat to cats. She says it is important to acknowledge heartworms in cats are difficult to diagnose, and that they shouldn’t wait for an influx of positive test results to recommend prevention. It’s also easy for Ali to recommend prevention because even if a client is doubtful of the importance of heartworm prevention, there are products that protect against a range of other parasites, including fleas and roundworms. This means one can treat for fleas while getting the benefits of heartworm prevention for the same investment.

“As technicians, I can’t see any reason why we wouldn’t talk to clients about heartworm prevention. If I am going to recommend prevention to a cat owner, I make sure and tell them I want to keep my own cat safe, so I use prevention on my cat,” Ali said. “A huge selling point for clients is what you do with your own pets, and I’m not willing to take any chances on my pets’ health, especially when it’s so easy to protect them.”

Catching up with an Auburn University Researcher

In the last KNOW Heartworms: Inside & Out, we summarized research conducted by Auburn University proving the vast difference between feline and canine heartworm infection and, more importantly, that heartworms do not need to reach maturity to cause severe pathology in cats.

Now, more than a year after the study’s release, we interviewed a leader in heartworm disease research, Byron Blagburn, MS, Ph.D., about how findings from both him and A. Ray Dillon, DVM, MS, MBA, DAVCIM, have changed the way veterinary professionals view feline heartworm disease and what is still to come.

Q: You have been presenting your research at dozens of veterinary conferences in the last year, what is the hardest point to convey?

For me, the hardest point to communicate effectively is that cats with heartworms present with neither specific (pathognomonic) signs, nor radiographic lesions that confirm heartworms are the cause. This is confirmed by the fact that most of these infections cannot be confirmed by either available antigen or antibody tests.

Q: You have been presenting your research at dozens of veterinary conferences in the last year, what is the hardest point to convey?

For me, the hardest point to communicate effectively is that cats with heartworms present with neither specific (pathognomonic) signs, nor radiographic lesions that confirm heartworms are the cause. This is confirmed by the fact that most of these infections cannot be confirmed by either available antigen or antibody tests.

Q: What new fact of feline heartworm disease is most shocking to veterinary professionals?

Veterinarians seem most surprised at the severity of the radiographic and histopathologic lesions caused by immature heartworms. When we view the lesions caused by immature heartworms, they are just as severe as lungs lesions in cats with disease caused by adult heartworms, yet in many areas, fewer than 1 percent of cats are infected with adult heartworms. It is likely that 10 times as many have lesions associated with immature worms.

Q: How have you expanded your research in the last year as a result of your research?

I would also like to see us generate additional supportive data on the prevalence of heartworm infection in cats. I believe that our information to date tells us that feline heartworm infection is more common than any of us would currently believe, but we need more.

Q: What new fact of feline heartworm disease is most shocking to veterinary professionals?

Veterinarians seem most surprised at the severity of the radiographic and histopathologic lesions caused by immature heartworms. When we view the lesions caused by immature heartworms, they are just as severe as lungs lesions in cats with disease caused by adult heartworms, yet in many areas, fewer than 1 percent of cats are infected with adult heartworms. It is likely that 10 times as many have lesions associated with immature worms.

Q: What new fact of feline heartworm disease is most shocking to veterinary professionals?

Veterinarians seem most surprised at the severity of the radiographic and histopathologic lesions caused by immature heartworms. When we view the lesions caused by immature heartworms, they are just as severe as lungs lesions in cats with disease caused by adult heartworms, yet in many areas, fewer than 1 percent of cats are infected with adult heartworms. It is likely that 10 times as many have lesions associated with immature worms.

Q: What questions do you still have as researchers?

Additionally, questions that I get most often include: “How do I treat HARD?” and “If I can’t cure HARD specifically, what is the value of a diagnosis?” At this point, until we can answer these questions definitively, prevention with available broad-spectrum products remains our only recourse.

Q: What questions do you still have as researchers?

Additionally, questions that I get most often include: “How do I treat HARD?” and “If I can’t cure HARD specifically, what is the value of a diagnosis?” At this point, until we can answer these questions definitively, prevention with available broad-spectrum products remains our only recourse.

Q: What questions do you still have as researchers?

Additionally, questions that I get most often include: “How do I treat HARD?” and “If I can’t cure HARD specifically, what is the value of a diagnosis?” At this point, until we can answer these questions definitively, prevention with available broad-spectrum products remains our only recourse.

Q: How have you expanded your research in the last year and what are your future plans?

I would like to see us expand our research to better understand the pathogenetic mechanisms of HARD, improved diagnostic techniques and specific HARD therapeutics. I would also like to see us generate additional supportive data on the prevalence of heartworm infection in cats.
Understanding Diagnostics

More and more studies are affirming the risk of feline heartworm disease and the danger it presents to cats. A study showing a 10 percent infection rate proved that in endemic areas, feline heartworm disease is more common than feline leukemia virus infection and feline immunodeficiency virus infection. Furthermore, researchers at Auburn University proved heartworms do not need to reach maturity to cause serious damage to a cat’s lungs.

Considering the proven prevalence and the seriousness of an infection, veterinary teams need to familiarize themselves with feline heartworm disease diagnostics.

Diagnosing feline heartworm infection is much more challenging than diagnosing an infection in dogs, but the American Heartworm Society (AHS) reminds us that “a conscious awareness of its existence is critical.” It is important for practitioners to understand what tests are available, be aware of their limitations and perform them in replication when there is a high index of suspicion. The tests most commonly used are heartworm serology, thoracic radiology and echocardiography. Microfilaria filtration tests are less useful, as cats are seldom microfilaremic when examined.

There are two types of serology tests, antibody (Ab) and antigen (Ag). Results must be interpreted carefully and neither test provides a complete picture. Given the limitations of serology tests, the AHS’s 2007 Guidelines for the Diagnosis, Treatment and Prevention of Heartworm Infection in Cats® recommends screening healthy cats with both antibody and antigen tests at the same time to increase the probability of making an appropriate diagnosis.

“Since cats can have heartworm disease associated with adult worms and juvenile worms, we need to use both tests as either test can be falsely negative,” said Robert K. McDonald, DVM, DACVM, Antech Diagnostics consultant.

An antibody test detects early infection by heartworms through the presence of anti-heartworm antibodies. Both female and male larvae can trigger a cat’s immune response. Five to six months post-infection, the cuticle, or body wall, of an adult heartworm appears as two parallel lines, often called “railroad tracks,” in the pulmonary arteries, right ventricle and occasionally the right atrium. Limitations of this detection method include image quality, patient cooperation, worm location and the skill of the practitioner.

The characteristic morphology of the pulmonary arteries in infected cats, unlike dogs, tends to normalize and may disappear completely, leaving no residual evidence of infection. The cardiac silhouette itself is seldom enlarged. A bronchointestinal lung pattern that may clear spontaneously within a few months is a common secondary feature suggestive of, but not unique to feline heartworm disease.

Other less commonly associated pulmonary findings include hyperinflation of the lungs with flattening of the diaphragm, focal parenchymal radiodensities, consolidated lung lobes, pleural effusion and pneumothorax. In some cases of feline heartworm disease, thoracic radiographs provide no evidence of infection.

Echocardiography is another option for detecting a heartworm infection by identifying the actual presence of worms. Since cats can have heartworm disease more challenging than diagnosing an infection in dogs, it is important for practitioners to demystify the disease and the complexities of diagnosis to pet owners and therefore be an advocate for prevention.

The AHS feline guidelines go into much more detail with all of these testing methods and should be consulted as the official recommendations of the Society. The guidelines are available to the public at www.heartwormsociety.org.
Each clinic that entered the **KNOW Heartworms Veterinary Hospital Awareness Contest** last year demonstrated use of the clinic kit materials and went out of its way to educate staff and clients about feline heartworm disease. Case studies and photos from each of the four winning teams are available on the Web site at www.knowheartworms.org/contest.html.

Last year’s first-place winner, Wolftever Pet Hospital in Harrison, Tenn., is continuing to focus on preventing heartworms in cats.

“Participating in the contest encouraged staff education about heartworms in cats, teamwork in decorating the clinic and teamwork in doing the program at the local elementary school,” Darlene White, DVM, a veterinarian at Wolftever, said. “And, I encourage all clients with sick cats to have heartworm testing done along with other labs.”

Wolftever is also continuing programs and efforts to promote prevention. “I try to make it a daily event to promote heartworm prevention in cats, and in mosquito season, I am going to push [pamphlets and preventives], and probably put an announcement on the outdoor sign to remind owners of the dog and cat mosquito/heartworm problem. I would also like to redecorate the clinic.”

White was pleased to have inspired other practices to promote prevention. “I am big on preventative medicine for myself, and just as much so for my animals,” she said. “The more we can educate the public about preventative medicine, the fewer tragic cases we will see that we cannot really help, or are limited as to how much we can help.”