

Focus

The IRISH WOLFHOUND FOUNDATION, Inc.



Cardiology Vets Evaluate 'Rescue' Drug Pimobendan

by William D. Tyrrell, Jr., DVM, DACVIM, Chesapeake Veterinary Cardiology Associates

Pimobendan is a drug used in Canada, Australia, and Europe to treat heart failure in dogs. It is marketed by the pharmaceutical company Boehringer Ingelheim under the brand name Vetmedin. In the US, Pimobendan is currently undergoing FDA clinical trials, and has not been approved for use. This drug has been a topic of ongoing conversation among veterinary cardiologists, veterinarians, and dog owners for the past few years.

The purpose of this brief article is to put forth some opinions to the Irish Wolfhound community about the pros and cons of Pimobendan. Since the drug is still under study, both for effectiveness and for safety, there is much uncertainty about it, and what we think we know at this point may still be incorrect. The opinions written are those of the author and reflect what is known currently. Additional studies in the United States and abroad may reveal new or different information over time.

My practice has been involved with the FDA clinical trials to see if Pimobendan should be approved for use here in the United States. I feel this medication is quite beneficial in certain circumstances. However, it is not for use in all dogs with heart disease. My practice has reserved the use of Pimobendan to use as a rescue drug in patients with advanced heart disease and congestive heart failure. We prefer to use more conventional medications that are FDA approved, such as Benazepril Digoxin, Enalapril, Lasix, Spironolactone, beta-blockers, etc., as starting points in treatment. These drugs may slow progression of disease and help the dog feel better. However, heart disease does sometime progress in the face of treatment. If a patient is no longer responding to standard medications, then we may speak with the owner about the use of Pimobendan and its pros and cons.

On the positive side, Pimobendan will usually improve a patient's heart failure symptoms when combined with other cardiac medications. It may also improve a patient's NYHA

heart failure score, i.e. improve exercise capacity/demeanor, etc. I have seen this drug improve some dogs' appetites as well. Lastly, it may also improve overall survival time for patients in congestive heart failure. However, I feel that, with the studies still in progress, it is still too soon to make blanket statements about the positive effects of Pimobendan.

What are the down sides to this medication, and why don't we place every dog with heart disease on this medication? Researchers have found that Pimobendan may increase the risk of sudden death in canine patients. Interactions may exist between other heart medicines, such as beta-blockers, and Pimobendan. My practice has, in fact, seen sudden deaths in patients treated with Dobutamine that were taking Pimobendan. Also, we have seen some increase in ventricular arrhythmias in patients treated with Pimobendan. This is a serious finding, because some of these arrhythmias are difficult to treat and may be fatal in themselves.

In summary, Pimobendan does appear to offer some benefits for canine patients with advanced heart disease and congestive heart failure. However, this drug has the potential for severe side effects, including sudden death. In my opinion, "Pimo" should be reserved for patients whose advanced heart disease is no longer responding to more well-understood medicines that have been used long term in veterinary cardiology. Further studies are required with Pimobendan in order to make more concrete and definitive recommendations for its overall usage.

If your veterinarian or veterinary cardiologist does wish to use Pimobendan legally in the United States, he or she must get approval from the FDA to import the drug from abroad. FDA approval can take up to four weeks to secure. Appropriate documentation of this approval has to accompany the shipment; otherwise, US Customs may seize the package.

Under the Microscope: Antibiotics

A two-part look at antibiotics, bacterial infection, and the growing problem of antibiotic resistance.

by Kathy Wilson



Bacteria are everywhere—around us, on us, inside us. Most of the time we don't know they are there. In sheer numbers and variety they are astounding. But it's their ability to reproduce themselves with incredible speed, spawning whole new generations in a matter of minutes, that enables them to invade and overrun their host before the immune system has time to marshal its defenses.

Only about 10% of bacteria cause disease, and many of these are harmful only some of the time. In fact, some bacteria are so helpful to us that we can't live without them. Some are helpful when they stay in their normal habitats, but cause real problems when they turn up where they don't belong. For example, take the infamous *E. coli* (*Escherichia coli*, of which there are many strains, most quite harmless). In the intestines, *E. coli* helps us digest our food; but if it strays elsewhere in the body it can cause critical illnesses in humans and wolfhounds alike.

Some bacteria use oxygen for metabolism; these are called aerobic. Others, like botulism and tetanus, do not use oxygen. These are called anaerobic.

Bacteria are classified as gram positive or gram negative based on their appearance when treated with a dye called a gram stain. *Streptococcus pneumoniae* (strep) and *Staphylococcus aureus* (staph) are common examples of gram positive bacteria. *E. coli* and *Salmonella* are common examples of gram negative bacteria. Often, different medicines are needed for gram negative than for gram positive infections. Bacteria can be aerobic or anaerobic and either gram positive or gram negative.

Illnesses hover constantly above us, their seed blown by the winds, but they do not set in the terrain unless the terrain is ready to receive them.

---Claude Bernard, 19th century French physiologist

How Antibiotics Work

There are two major ways that antibiotics work.

Bacteriostatic antibiotics work by keeping bacteria from reproducing. Bacteria reproduce so rapidly that slowing or stopping their reproduction gives the host (your wolfhound) time to get its immune system into high gear to fight off the infection.

Bactericidal antibiotics actually kill the bacteria. In high concentration, most bacteriostatic antibiotics

are considered bactericidal. However, in low concentrations, bactericidal antibiotics are only bacteriostatic. Adequate dosage is important!

Which Antibiotic to Use When?

Choosing an antibiotic is not necessarily simple. Your vet must also evaluate your hound's symptoms, age, overall health, and any previous problems the hound has had with medications.

In addition, your vet needs to consider these issues.

Antibiotic Spectrum An antibiotic that is effective against many different bacterial infections is called *broad-spectrum*. If your hound is very ill, your vet will prescribe a broad-spectrum antibiotic, hoping it will "cover" the exact cause. Your vet may, in the meantime, run tests to determine the exact type of infection, but when a hound is very sick, it is not safe to wait for test results, which can take days.

Tissue Penetration Antibiotics may not be equally effective in all parts of the body. Some antibiotics work very well for infections in the intestines, for instance, but they don't get "into" the lungs very well and therefore would be bad choices for pneumonia.

Culture and Susceptibility

is a test that determines what bacteria are causing an infection, and what antibiotic or antibiotics will work well against these specific bacteria. This test generally takes one to four days to produce results, which is why it is unsafe to wait for final results if your hound is gravely ill.

Combination Therapy: Synergy vs. Antagonism Sometimes antibiotics with different mechanisms of action are combined in order to boost their bacteria-killing power, broaden their spectrum of activity, or to overcome bacterial resistance. This chemical effect is known as *synergy*. Other antibiotics should never be combined, because they are *antagonistic*, which means they decrease or cancel out each other's effectiveness. You should always discuss with your vet any medications you have given your hound, to avoid the chance of an antagonistic combination.

Antibiotic Classes

Antibiotics are frequently grouped into classes based on their chemical structures. Those in the same group generally work in very similar way.

Antibiotic Primer

The following antibiotics are grouped by class, progressing from first-line choices to those usually reserved as last-chance drugs.

Penicillins

Penicillins were the first antibiotics introduced. The drug most familiar to us, Amoxicillin, is effective against many different bacteria including Pneumococci, Streptococci, and certain strains of Staphylococci. The drug Clavamox (or Augmentin, in the human formulation) is Amoxicillin with a chemical called sodium clavulanate added during manufacturing. Clavamox is effective against a wider range of bacteria than Amoxicillin alone. Penicillins and Clavamox are widely prescribed as a first line of defense for respiratory, urinary tract, and soft tissue infections. Penicillins and cephalosporins are both members of the beta lactam class of antibiotics.

Sulfonamides

Sulfa drugs were among the earliest antibiotics used, and they are still widely prescribed, in part because

of their low cost. Combining certain sulfas with drugs like Trimethoprim increases their usefulness. These combination drugs (such as SMZ-TMP and Bactrim) provide synergistic action against a variety of pathogenic bacteria. Sulfa drugs can cause worrisome side effects, including joint inflammation and hepatitis, and can interfere with blood tests to determine thyroid levels.

Cephalosporins

Cephalosporins are broad-spectrum antibiotics, initially developed to treat penicillin-resistant infections. Cephalosporins treat a wide variety of infections, from respiratory to urinary tract, and are often used for surgical prophylaxis. These drugs are further classified into 'generations,' with each successive generation adding a broader range of effectiveness. First-generation cephalosporins include the familiar cephalexin (Keflex) and cefazolin (Ancef). These drugs are frequently prescribed as a first line of defense.

Tetracyclines

Tetracyclines make up a group of broad-spectrum antibiotics which includes doxycycline. "Doxy" is widely considered the drug of choice for treating Lyme disease, a tick-borne illness caused by the bacteria *Borrelia burgdorferi*. Doxycycline is used for other infections as well, notably brucellosis.

Metronidazole

Metronidazole (Flagyl) is an antibiotic especially effective against anaerobic infections. It is also effective against certain protozoal infections, especially giardia. Metronidazole is a very effective anti-diarrhea medication because it reduces inflammation in the bowel. Metronidazole is often prescribed for colitis, which may or may not be caused by inflammatory bowel disease.

Macrolides

Macrolides are used to treat certain respiratory and soft tissue infections. The newer members of this group, such as azithromycin (Zithromax) and clarithromycin, are known for their particularly high levels of lung penetration, as well as activity against some bacteria which are resistant to penicillin, including *Mycoplasma*.

Tylosin (marketed as Tylan) is a macrolide approved for use in farm animals. Although it is not labeled for use in dogs, veterinarians frequently prescribe it to treat chronic colitis; Tylan may be effective even if other treatments have failed.

Fluoroquinolones

The fluoroquinolones are broad-spectrum antibiotics that can be used to treat intracellular infections, such as those caused by *Brucella* and *Mycobacteria*. Baytril (enrofloxacin) and Zenaquin (marbofloxacin) are the most commonly chosen fluoroquinolones in veterinary practice. They are not usually used as a first line agent, but reserved for more serious illnesses. Young dogs should probably not receive fluoroquinolones, since cartilage lesions have been reported as a side effect in immature dogs.

The drug ciprofloxacin (Cipro) does not have FDA approval for use in animals, but is prescribed by veterinarians "off label," no doubt in part because the generic formulation is less expensive than veterinary fluoroquinolones. However, some pharmacologists believe dogs do not absorb Cipro nearly as well as humans do, and may not be getting the desired benefit. Physicians and veterinarians generally agree that Cipro should be reserved for patients who have failed at least one prior therapy.

Bacterial resistance to the fluoroquinolones is a very real and increasing problem. Some strains of streptococcus pneumoniae (a.k.a. pneumococcus) and salmonella are now resistant to fluoroquinolones, meaning that these drugs no longer are effective against them. Some scientists estimate that this entire category of medications will be totally ineffective in as little as five years if current resistance trends continue.

Lincosamides

Clindamycin (Antirobe) is highly effective against anaerobic bacteria, and its ability to penetrate bone and soft tissue makes it a good choice for dental disease, osteomyelitis (bone infection), and skin wounds and abscesses. Depending on results of culture and sensitivity tests, some veterinarians prescribe Antirobe in combination with Baytril to treat pneumonia.

Aminoglycosides

Gentamycin, neomycin, and kanamycin are widely-used aminoglycoside antibiotics. Wolfhound owners probably encounter these drugs most often as topical preparations (ointments or drops) for ear or eye infections. Systemic use of aminoglycosides is reserved for very serious infections, since they must be administered intravenously and can have potentially serious side effects. They are frequently combined with beta-lactams (penicillins or cephalosporins).

Carbapenems

Imipenem (Primaxin) is an intravenous antibiotic which has a broad spectrum of activity against aerobic and anaerobic gram positive as well as gram negative bacteria. It is not labeled for veterinary use, and is a last-chance drug, given only when other therapies have failed.

Vancomycin

Vancomycin treats certain infections caused by gram positive bacteria. Vancomycin is not labeled for veterinary use, and must be given intravenously. It is very powerful and very expensive, and is considered a last-chance drug, used only

The time has come to close the book on infectious diseases. We have basically wiped out infection in the United States.

— *Surgeon General Dr. William H. Stewart, 1969*

after treatment with other antibiotics has failed. Some bacteria have become resistant even to vancomycin.

Linezolid

Linezolid (Zyvox) was introduced in 2000 to treat antibiotic-resistant strains of gram-positive bacteria, such as streptococcus pneumoniae. It is not labeled for veterinary use.

What's Next?

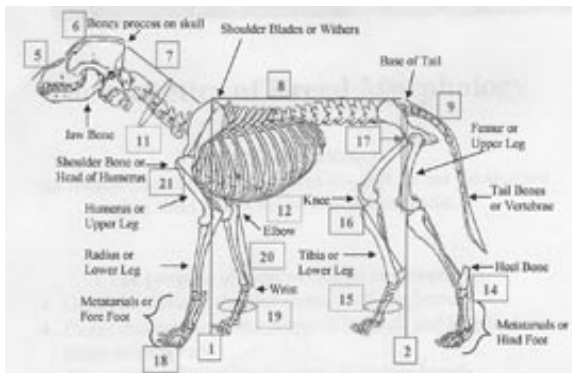
The ability of bacteria to adapt to their environment—an environment that now includes many different types of antibiotics—has levelled the playing field in ways that public health authorities never dreamed possible. Bacterial strains resistant to antibiotics are now commonplace in hospitals, and have made some common infections (like ear infections in children) more difficult to treat than they were ten or twenty years ago.

Resistant strains of bacteria are having an impact on veterinary care as well. In the second half of this article, we will take a look at the growing problem of resistance. How does it affect our wolfhounds, and what can we do to avoid making it worse?



Measuring Up!

Dr. Nate Sutter of the Ostrander Lab at the National Institutes of Health is conducting research to find the genes that control body size and morphology in domestic dogs. To do this, he and his colleagues are studying those breeds which demonstrate the extremes in size. For obvious reasons giant breeds like the Irish Wolfhound and toy breeds are of particular interest. The IW can provide invaluable information about the genetic variants responsible for differences in body mass.



In order to better quantify the overall size of the IW, the Ostrander Lab researchers are looking for a set of body size measurements from several individual IWs. Measurements can be completed in less than ten minutes for most dogs, and they will provide valuable data for this research.

We will be measuring 20 volunteer IWs on the show grounds on Wednesday afternoon, April 26. The only requirement is that the hound be two years of age or older. Stop by the Lifetime Cardiac Study Tent at the National Specialty to learn how your IW can be a part of this important research. Please take this opportunity to help the dedicated researchers at the Ostrander Lab by participating. Measurements and any genetic information collected for each dog are strictly confidential.

The Irish Wolfhound Foundation

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Memberships and donations are tax deductible and members receive a 10% discount on Gift Shop purchases.

SPECIAL REQUEST...
 Donated items are needed for the IWF Specialty Auction. Please contact Carolyn Dean at 636-441-7383 or info@IWFgiftshop.com.

Your purchase or donation will help fund Health Studies, Education, and Rescue.

Visit us at the National Specialty!

Thanks for your support.

IWF OFFERS ECHOCARDIOGRAMS AT 2006 SPECIALTY

The Irish Wolfhound Foundation will offer cardiac ultrasounds (echocardiograms) for wolfhounds at the 2006 IWCA Specialty for a nominal fee. Dr. Henry Green, veterinary cardiologist from Purdue University, will be performing echoes on Thursday and Friday, April 27 and 28, at the Purina Farms show site.

The cost of the echocardiogram is \$75, which is a considerable savings. Depending on the area of the country where you live, the typical charge for an echocardiogram by a board-certified cardiologist is about \$300. The exam takes only twenty minutes. All wolfhounds two years of age or older are eligible, regardless of whether or not previous cardiac screening results were found to be normal.

Dr. Andrea Vollmar, a veterinary

cardiologist from Germany, is reporting a large number of IWFs with normal EKGs diagnosed with cardiomyopathy. Although this is something we have not seen in the U.S., we would like to compare echo and EKG results to Dr. Vollmar's data.

Why should your wolfhound have an echo? Well, the EKG (or ECG), which we offer each year as part of the Lifetime Cardiac Study testing measures the electrical activity of the heart—it detects rhythm abnormalities. The echocardiogram, on the other hand, is an ultrasound of the heart, which gives two- or three-dimensional images of the heart. It's painless and non-invasive, and allows the cardiologist to visualize and assess the overall health of the

heart. The echo can show leakage of blood through the valves, the size of the heart, abnormal communications between the left and right side of the heart, heart muscle contractility, etc.

Echoes will be available all day Thursday and Friday, April 27 and 28, at the Purina Farms show site. However, appointment times are limited and reservations are required, so stop by the IWF Health Testing Tent and sign up your wolfhound.



No Yodeling Required! It's not that kind of echo!

Check Out The New IWF Website!

The IWF website is undergoing big changes! Our online health discussion bulletin board is back up and running! In the near future, you will be able to fill out forms for our health studies online and email them, find articles from the newsletter, and be updated on testing dates and sites. So add www.IWFfoundation.org to your bookmarks!

IWF Lifetime Cardiac Study 2006

Drs. Mariellen Dentino and Henry Green Discuss the Lifetime Cardiac Study Wednesday Evening, April 26

Mariellen Dentino, M.D., will present an update on the IWF Lifetime Cardiac Study on Wednesday evening, April 26th. Dr. Dentino is chief architect of this project, which is supplying us with much-needed information on cardiac health in the Irish Wolfhound. This study is also providing us with phenotypic data on over 1000 Irish Wolfhounds, and has already shown us trends in health issues affecting longevity in the IW.

Henry Green, DVM, DACVIM (Cardiology), Assistant Professor of Veterinary Medicine at Purdue University, will join Dr. Dentino to discuss some issues affecting cardiac health in the IW. His particular area of research has been hormone levels in normal wolfhounds and in those with known cardiac disease.

IW EKG, BP, Urinalysis, and Blood Collection for IW DNA Bank Available at 2006 Specialty

Lifetime Cardiac Study Testing will be available Wednesday, Thursday, and Friday, April 26 - 28, between 10:00 AM and 2:00 PM at the Health Testing Tent on the Purina Farms show grounds. Testing is free to dogs enrolled in the Lifetime Cardiac Study, and is available for a nominal fee to all other hounds. Bring your IW and make sure he's had his heart tested for 2006!



• DONATIONS NEEDED •
THE IRISH WOLFHOUND FOUNDATION
SPECIALTY AUCTION

If you have something you'd like to donate to this year's IWF Auction, please contact Carolyn Dean at 636-441-7383 or email: info@IWFgiftshop.com.

We also welcome cash donations with which items for the auction will be purchased in your name.

Please remember that all donations to The IW Foundation are **tax deductible** and proceeds will go toward funding Health, Education, & Rescue.

For those of you attending the National, be sure to stop by the
IWF GIFT SHOP.

We'll have quite a few **NEW** items not sold on line: plus, if you're not a member already, you can join the Foundation for only \$20. and receive a **10% DISCOUNT** on Gift Shop purchases.

Help support **THE IRISH WOLFHOUND FOUNDATION.**

The hounds thank you in advance for your generosity!

IW CERF Clinic at the 2006 IWCA Specialty

Dr. Amy Hunkeler, DVM, DACVO, will perform our fourth annual CERF Clinic on Thursday, April 27th. The Clinic will be held on the show grounds, beginning at 2:00 pm. Registrants must arrive 20 minutes before the scheduled appointment so that their hounds' eyes can be dilated. The fee for the eye examination is \$25.00 per hound. Reservations can be made at the Health Testing tent.

The Canine Eye Registration Foundation (CERF) gathers, stores, and statistically evaluates canine eye diseases. This information may be immediately useful to some breeders who are contemplating breeding by identifying heritable ocular disease prior to committing affected animals to breeding programs. However, some inherited disease may not be clinically evident until animals are advanced in age. It is, therefore, recommended to continue to "CERF" animals annually throughout their lives – even beyond their useful breeding life – so that late onset inherited disease can be identified. When utilized in this manner, data obtained from CERF examination can be the most useful in developing or managing a breeding program.

A more broad-reaching purpose of CERF examination is the database compiled from examination findings. The Canine

Eye Registration Foundation regularly evaluates the ocular diseases commonly found in each breed. As certain problems are found to be more frequent, or believed to have an inherited component to them, it may be advised that affected animals should not be bred. Thus the conditions for which an animal may not "pass" a CERF exam can change from time to time as more animals are entered in the database.

All Irish Wolfhounds, especially those used for breeding, should have CERF examinations annually throughout their lives. The information derived from these exams will help us avoid heritable ocular diseases with potential for blindness from becoming common in our breed.



The Irish Wolfhound Foundation gratefully
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The Irish Wolfhound Foundation, Inc.

TREASURER'S REPORT

January 1, 2005 ~ December 31, 2005

Quarter	Receipts	Disbursements
First Quarter	325.00	1,541.29
Second Quarter	6,707.00	3,378.62
Third Quarter	20,900.00	17,789.45
Fourth Quarter	3,766.69	2,456.48

TOTAL CASH ACCOUNTS as of December 31, 2005 ~\$134,891.69*

* including endowment funds

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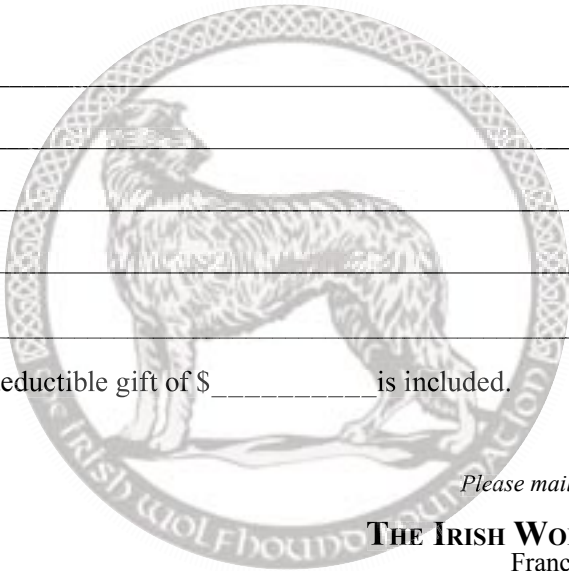
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Membership in the IWF shows your commitment and support of IWF health programs and research! Yearly dues are \$20 per household. Support the only 501(c)(3) charitable organization dedicated to funding IW Health Studies, Research, Rescue, and Education by becoming a member or renewing for 2006. In return, you will continue to receive the Foundation's newsletter, and you'll receive a 10% discount on all IWF Gift Shop purchases!



What's keeping YOU from joining? It's time to get up off the couch and mail in your annual IWF membership dues!

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