

Focus

The Irish Wolfhound Foundation, Inc. Volume 3, Number 2 2005



IWF Funds New Research Study **Pneumonia & PCD in the IW**

The Irish Wolfhound Foundation is providing funding for Dr. Margret Casal, at the University of Pennsylvania School of Veterinary Medicine, to characterize pneumonias and PCD in the Irish Wolfhound, and to identify the causative gene she believes may be involved. These diseases are serious, and sometimes fatal, respiratory problems in Irish Wolfhounds. Primary Ciliary Dyskinesia, which is also called PCD or Wolfhound Rhinitis, is a devastating disease, often significantly decreasing lifespan and compromising quality of life in the affected dogs. Dogs with PCD present symptoms at a very early age, have frequent pneumonias, and generally need to be on antibiotics for life. In previous research funded by the IW Seizure Study, Dr. Casal already worked to identify a malfunction of the cilia (tiny hair-like structures lining the wolfhound's nasal passages and airways) as the defect involved in this condition. Pedigree analysis of affected dogs has led her to believe that PCD is inherited as an autosomal recessive trait, meaning that both parents of an affected dog must be carriers or affected themselves to pass it on to their progeny.

Pneumonia and recurrent pneumonias (RP) are also common in the Irish Wolfhound, and Dr. Casal believes they may be closely related to PCD. Data collected from the IW Lifetime

Cardiac Study April, 2000—April, 2005, shows that nine wolfhounds, or 4.9% of the total number of 184 wolfhounds who have died thus far, have died from pneumonia and respiratory disease. This places pneumonia/respiratory disease in third place (along with bloat/GDV and rear paralysis) as cause of death in our breed. Dr. Casal suspects that the recessive gene which is involved in IW PCD, and which controls how effectively the cilia can clear pathogens and foreign particles from the airways, will also be proven the culprit in making some wolfhounds more susceptible to pneumonia and respiratory diseases. She believes that the number of copies of this gene which are inherited may determine whether or not an IW has PCD or is simply more susceptible than the average hound to pneumonia. Isolating the gene involved will be much simplified because a new technology involving protein analyses of the nasal cilia is available at the University of Pennsylvania. Using this exciting new technique, Dr. Casal can shortcut the long route to identifying the causative gene, and then develop a DNA test we can use to help breeders make better-informed decisions in their breeding programs.

Dr. Casal may be familiar to many IW owners, since she has been associated with our breed for many years as the lead researcher involved in studying epilepsy and PCD in IWs. She is an associate professor in the Veterinary School's Section of Medical Genetics, and was a highly-acclaimed speaker at the 2004 IWCA Specialty in Lima, Ohio. Her article describing epilepsy in the wolfhound is being published in the American Journal of Veterinary Internal Medicine.

If your wolfhound has had one or more episodes of pneumonia, please have your veterinarian contact Dr. Casal directly at (215)898-0029 or casalml@jalpur.com. If you would like more information, or would simply like to share information on a wolfhound who has died of pneumonia or PCD, please contact Kathy Wilson at (540) 592-3705 or glendorling@earthlink.net.



Pictured from left to right: Dr. Margret Casal, shown with a four-footed friend and veterinary student/lab assistant Jennifer Scheidt. Both Dr. Casal and Ms. Scheidt will be continuing their work on IW respiratory disease in this new study.

CONTENTS

New IWF Pneumonia/PCD Study
1

Genes, Wolfhounds, & Cancer
2

IW Lifetime Cardiac Study
3

2005 CERF Clinic Report
4

Pneumonia: What You Need to Know
5

Portosystemic Shunt in IWs;
Preliminary IW Lymphoma Study
6

IWF Donors
7

Membership
8

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Genes, Wolfhounds, and Cancer

by Kathy Wilson

Cancer is a genetic disease. This does not mean that cancer is a hereditary disease—sometimes it is, but more often, it is not. It is always a disease of genes “run amok,” and it always has its beginnings inside one of the body’s trillions of cells. Just one mistake in the chemical ‘spelling’ which makes up one gene can lead to a series of events that ends, tragically, as a malignancy. Just how this occurs in our hounds is the subject of this article.

Each cell in the wolfhound’s body (or your own, for that matter) has a specific job to perform. Kidney cells regulate fluid balance while removing waste products, lung cells exchange oxygen for carbon dioxide, etc. Each cell performs its duty for the good of the whole body, much as a violinist and a clarinetist play different parts in an orchestral performance of, as an example, Beethoven’s Fifth Symphony.

Cells must also maintain the ability to grow. This allows the body to respond to injury by healing, and enables the embryo to grow into an adult. Most of the time, however, cells should not grow. Their ability to divide and reproduce must be kept strictly in check. Going back to the analogy of the violinist and clarinetist, each may be capable of memorable solo performances, but usually the orchestra has a greater need for musicians who use their abilities to contribute to the group effort.

Just as the orchestra’s musicians must be mindful of cues from the conductor while retaining awareness of the orchestra as a whole—how else will they know just how loud that second “Da da da DUM” should be if they haven’t heard the first one?—so cells must respond to signals from each other as well as from hormones, the brain, etc. They are constantly sending and receiving messages letting them know just what’s going on, and what they need to be doing at any given time. And just as each member of the orchestra has the complete score in front of him and knows how his part fits into the whole, so each cell has a complete set of the 38 pairs of chromosomes which, taken together, identify him—or her—as one uniquely individual Irish Wolfhound.

At the same time that each cell is just one very small part of the whole animal, it is a very complex, industrious world in its own right. It teems with proteins and enzymes, each molecule a cog in the machinery of the cell, which is, in turn, a cog in the smooth working of the machinery of the IW body. In fact, there is an unfathomable amount of activity going on every minute of every day in each cell, all of it necessary to sustain life. In every sense, there is more going on than meets the eye..... even when that eye is looking through a high-powered microscope.

We tend to think of genes mainly in terms of affecting physical characteristics like coat color, angulation, and tail set. They certainly do that, but they do so much more. They are involved in controlling every aspect of each cell’s existence—they are the ultimate micro-managers. They have the last word in deciding which cells live and which cells are no longer useful to the body and should be removed. There are several genes whose only job is to ensure that these operations are carried out smoothly. There are genes to tell cells to divide when they need to, genes to repair any DNA damage which may occur, and genes to tell cells when it’s time to give up their lives for the greater good of the body.

As it turns out, cells do need to be replaced frequently. Genes designed to facilitate cell replacement are called proto-oncogenes, and they stimulate cellular growth. When the DNA in cells sustains injury, as it does each day, there are genes whose only assignment is to patch them up: these are called DNA repair genes. And finally, when cells have outlived their usefulness, there are genes that police the cells, ensuring that those cells needing to ‘commit suicide’ for the good of the whole body do just that. These are the tumor-suppressor genes, and their role is arguably the most important one of all.

Tumors begin when a cell’s DNA is damaged (mutated), but—and this is a critical distinction—tumors become malignant and can spread *only* when there is an accumulation of many mutations in a specific set of cells: proto-oncogenes, DNA repair genes, and tumor suppressor genes.

Even when we speak of cancer as being “inherited,” what we really mean is that the *predisposition* to cancer is inherited in the germline—the complete set of 38 pairs of chromosomes inherited at the time of conception, one set coming from each parent. This is the individual wolfhound’s ‘genome,’ and it contains the DNA which will be present in every single cell (except red blood cells, which do not contain genes).

In humans, we are aware of a few cancers which are caused by inherited defects in genes, such as the BRCA-1 and BRCA-2 genes. These are tumor-suppressor genes implicated in some types of breast and ovarian cancers. In dogs, malignant histiocytosis in Bernese Mountain Dogs is an example of a cancer believed to have a hereditary basis. But even in these cases, mutations must occur in additional genes for the malignancy to form and be able to spread—to become a cancer.

There will be literally trillions of cell divisions occurring in each wolfhound’s lifetime; there will also certainly be innumerable opportunities for genetic mistakes to accumulate. This is why the risk of cancer increases in dogs as they age, just as it does for us. We know that, of all the malignancies which can occur in dogs, osteosarcoma is the one which occurs most often in wolfhounds and other large and giant breeds. Its incidence increases dramatically as the wolfhound ages. Unfortunately, by the time the IW is limping and we notice a small swelling, a tumor suppressor gene has probably mutated, and the malignancy may have begun to infiltrate surrounding tissue. A few cancer cells may have broken away and begun to circulate throughout the body, using the bloodstream to travel to the lungs and other long bones. In humans, the process which begins as a single, undetected mutation in one gene and ends up as an actual malignant cancer usually takes many years. In dogs, the process of successive mutations seems to be accelerated, making cancer even more difficult to detect in its earliest stages, when we might have a better chance of managing it.

There are many reasons why searching for specific genes involved in IW diseases is important. The genetic language “spoken” in hounds and humans is identical, and canine research may have human applications. Researchers have begun to realize the wealth of information contained within a purebred’s pedigree, and this information is particularly powerful when combined with the detailed phenotypic data we’re compiling in the Lifetime Cardiac Study. We hope, and we believe, that one day, we may be able to rely on non-invasive genetic testing to breed away from these diseases without needlessly eliminating dogs who may not carry a particular defect from our already small gene pool. We must start somewhere, and that’s why the IWF is dedicated to collecting and storing our hounds’ blood in our own DNA Bank. Each blood sample can be used for multiple studies which will benefit our breed.

Surely we live in one of the most exciting eras in history. As the secrets contained within genes are revealed, we are presented with unique opportunities to use this knowledge for the betterment of our beloved breed. What could be better than using what we learn to help our hounds?

Maestro, cue the orchestra!

IW Lifetime Cardiac Study Update

Study Info

The Irish Wolfhound Lifetime Cardiac Study began enrolling IWs in April, 2000. Entries closed in June, 2004, when the total number of dogs enrolled reached the goal of over 1,000 IWs. Over one thousand dogs are required in order to yield statistically valid data, so it is extremely important that all those entered in the study continue to participate. All study dogs will be followed throughout their lives with annual EKG screenings and a yearly follow-up questionnaire. Whenever possible, data from any other tests and veterinary reports are included in each dog's file.

Unfortunately, seventy-nine dogs have been dropped from the study because their owners failed to complete the annual questionnaire. Dogs are dropped *only* after owners have failed to respond to *at least* four requests for follow-up information.

In an effort to simplify collection of data for both owners and data entry personnel, we have begun mailing questionnaires on a semi-annual basis, rather than the quarterly schedule used previously. We hope this will help us do a better job for those owners who have several hounds enrolled in the study.

Once again, we thank you for continuing to participate in this study. This study is truly a collaborative effort; its success depends on the participation of each and every owner. Thank you for your support—you are truly making a difference.

The following statistics include data from questionnaires returned through April, 2005.

Cardiac Disease

The total number of wolfhounds with abnormal EKGs is 426, or 35%. The total number of wolfhounds enrolled in the Lifetime Cardiac Study who have been diagnosed with atrial fibrillation (AF) is 153, or 12.9%. Nearly one-third of these dogs had normal EKGs when they first entered the study. Atrial fibrillation is still the most common type of cardiac disease in Irish Wolfhounds.

Other abnormalities appear less frequently than AF. Most of these irregularities are not present at birth, but appear later in life, often after the wolfhound is three or four years of age. One of these conditions may be a precursor to atrial fibrillation, and this is atrial premature contractions, or APCs. Thirty-three of the dogs in the study showed this abnormality, so follow-up on these wolfhounds is helping us determine the validity of this supposition. Single APCs usually do not require treatment unless they progress to AF or another supraventricular tachycardia.

One other benign condition, which is manifested as a prolonged P-R interval on the surface EKG, is called first-degree AV block. It is secondary to delayed/prolonged electrical conduction through the atrioventricular node. Sixty wolfhounds showed this abnormality in their EKG screening. This may be a congenital abnormality; however, it is likely an acquired condition, secondary to benign fibrosis of the atrioventricular node. Unless this condition progresses to second- or third-degree atrioventricular block, it does not warrant any concern.

Other abnormalities need further evaluation and monitoring by a veterinary cardiologist. Ventricular premature contractions (VPCs) were recorded in 89 wolfhounds. VPCs in wolfhounds appear to be more benign than they are in Boxers and Dobermans—in these two breeds, they can signal a condition which frequently leads to sudden death. Nonetheless, VPCs are often present in wolfhounds

with impaired cardiac function, as well as those with no heart disease. Because VPCs can lead to ventricular tachycardia, which is a very serious condition, all dogs with VPCs should be closely monitored.

Fifty-two wolfhounds showed R-wave amplitudes greater than 3mV in Lead II, indicating possible left ventricular hypertrophy/enlargement. Seventeen IWs had right bundle branch block (RBBB) which may, on rare occasion, indicate serious issues with the heart. RBBB is usually, however, a benign finding, much like that of first-degree AV block. *In all cases where the EKG shows a potentially serious problem, IW owners are strongly advised to seek further evaluation from a veterinary cardiologist.* The cardiologist will usually perform an additional EKG as well as an echocardiographic screening (cardiac ultrasound), so that heart function can be more accurately assessed and, if warranted, an appropriate treatment regimen prescribed.

The average age of dogs who have died or been euthanized for cardiac disease is 7.24 years, which is actually older than the average age of death (all causes) 6.55 years recorded thus far in our study.

In his 1998 *Harp & Hound* article detailing EKG results from testing at the 1997 IWCA Specialty, veterinary cardiologist Dr. Neil K. Harpster stated, "While there is some variability in the numbers of the various abnormalities that are defined in the different years, the total number of recorded abnormalities is consistently over 25 percent." This continues to be the case today, with total EKG abnormalities found in approximately 33% of the hounds tested. Atrial fibrillation is still by far the most common abnormality.

Mortality

Mortality statistics appear to be very similar to those previously reported for our breed. Average age at death was 6.55 years, and these statistics now include data for 184 dogs out of our total enrollment of 1,184. Cancer (all kinds) is the most common cause of death in wolfhounds, accounting for 31% of deaths. As expected, heart disease was reported as the second highest cause of death at 24.5%. The major surprise in mortality rates came in the three-way tie for third place. At 4.9% each, bloat/torsion, rear paralysis, and respiratory disease/pneumonia accounted for almost 15% of IW deaths. Cancer deaths can be further broken down into osteosarcoma (13.2%), lymphoma (8.2%), hemangiosarcoma (2.2%), and chondrosarcoma (1.1%). Sudden death occurred in 3.8% of dogs. In cases where little or no information was provided regarding cause of death, owners will be sent forms to collect further information.

Cause of Death	Percentage	Average Age (Mos.)	Rank
Cancer - All	31.0 %	77.3	1st
Osteosarcoma	13.8 %	52.0	
Lymphoma	8.2 %	65.9	
Hemangiosarcoma	2.2 %	91.0	
Chondrosarcoma	1.1 %	52.0	
Cancer - Other	.8 %	84.7	
Cancer - Not Specified	2.2 %	85.3	
Heart Disease	24.5 %	86.9	2nd
Bloat/Torsion	4.9 %	73.9	3rd
Rear Paralysis	4.9 %	98.1	3rd
Renal Failure	2.2 %	77.8	
Respiratory/Pneumonia	4.9 %	70.0	3rd
Sudden Death	3.8 %	65.7	
Other Causes	16.8 %	72.5	
Unknown Cause	3.8 %	78.7	
No Answer	3.3 %	77.0	

Mariellen Dentino, MD, William D. Tyrrell, Jr., DVM, DACVIM, and Kathy Wilson contributed to this article.

Irish Wolfhound CERF Clinic Report

IWCA Specialty – Eureka, Missouri

May 20, 2005

by Laurence E. Galle, DVM, DACVO

Nineteen Irish Wolfhounds were presented for examination at the CERF clinic on May 20, 2005. It is difficult to make broad interpretations about ocular diseases common to Irish Wolfhounds using this relatively small sample of the population; however, cataracts, corneal dystrophy, and distichiasis were the most commonly identified problems in this clinic. Other problems identified less frequently included eyelid tumors, ciliary body cysts, and retinal dysplasia. The frequency of these findings is listed in the table below, followed by a brief description of each of these conditions.

Cataracts

Of those problems identified during this CERF clinic, the most likely to cause visual deficits is cataracts. Cataracts are opacities of the lens of the eye. The lens is responsible for focusing the light entering the eye onto the retina, where it is converted to electrical energy for processing in the brain. Under normal conditions the lens is completely transparent. When some abnormality occurs that causes all or a portion of the lens to become opaque, it is called a cataract. Not all cataracts compromise vision, but they have the potential for doing so. Most cataracts are inherited, though they may not be present at birth. With few exceptions, animals with cataracts are not eligible for registration with CERF.

PROBLEM DIAGNOSED	NUMBER AFFECTED (19 IWs Examined)
Cataracts	4
Corneal Dystrophy	3
Distichiasis	3
Ciliary Body (Iris) Cysts	2
Retinal Dysplasia	1
Eyelid Tumor	1

Corneal Dystrophy

Corneal dystrophy is an inherited opacity of the cornea. The cornea is the clear surface of the front of the eye, and may be compared to the windshield of your car. Corneal dystrophy is inherited, usually bilaterally symmetric, and is often progressive in nature. To the lay person, it may look like a slight “cloudiness” or “film” over the eye, or may be so significant as to look like a large, dense, white or grey spot on the cornea. It does obstruct some light from entering the eye, and can potentially cause visual deficits if severe. In spite of this, many dogs with corneal dystrophy do not have any apparent visual deficits. Though it is inherited, CERF does not currently penalize Irish Wolfhounds for having corneal dystrophy and lists breeding recommendations as “breeder option.” When CERF lists breeding advice as “breeder option,” it generally means that the condition is relatively frequent throughout the breed, but a pattern of heritability has not been established. In such a situation a breeder should use discretion when using the affected animal in a breeding program.

Distichia

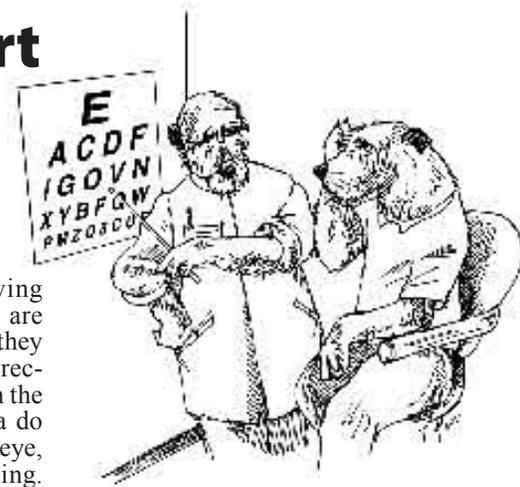
Distichia are small hairs growing from the eyelid margins. They are different from eyelashes in that they are much smaller and grow in direction that may allow them to touch the cornea. In many dogs, distichia do not cause any irritation of the eye, and are thus an incidental finding. In these animals it is not necessary to have the hairs removed. In some patients, however, these small hairs may be short and stiff, and may cause irritation of the eye or even corneal ulcers. In such cases they should be surgically removed by excision, freezing, or electroepilation. Though distichia are found more frequently in some breeds, a mode of inheritance has not been established.

Ciliary Body/Iris Cysts

Ciliary body cysts or iris cysts are small fluid-filled sacs in the eye. These sacs arise from tissue of the iris or ciliary body. The exact cause of these cysts is not determined. Though they rarely impact vision, they may in some occasions get large enough to obstruct light from entering the pupil and result in a visual deficit. Therefore, it is generally not necessary to provide any treatment for this problem. As there is no evidence to suggest a mode of inheritance for this problem, CERF considers it a “breeder option” to breed affected animals.

Retinal Dysplasia

Retinal dysplasia is a malformation of the retina that is present from birth. The simplest form of the disease is “folding” of the retina in one more places and rarely results in vision loss. A more severe form known as geographic retinal dysplasia affects large areas of the retina and is different from folding of the retina in that the affected areas are very disorganized and malformed. The geographic form of retinal dysplasia may result in large areas of visual deficits or may eventually lead to retinal detachment and complete blindness. Many breeds are known to be predisposed to retinal dysplasia, but it is not frequently reported in Irish Wolfhounds. The most recent publication by CERF reports only seven cases of retinal dysplasia out of 386 dogs examined from 1991-1999. There is currently no breeding recommendation by CERF for Irish Wolfhounds affected with retinal dysplasia.



CERF

The Canine Eye Registration Foundation gathers, stores, and statistically evaluates canine ocular diseases. This information may be immediately useful to some breeders 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, as well. 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 usefulness of CERF examination is the database of examination findings. The Canine Eye Registration Foundation regularly evaluates the ocular diseases commonly found in each breed. As certain ocular 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.

Summary

In summary, the CERF clinic was successful and helpful in identifying some potentially heritable problems in a small portion of the dogs presented for examination. I would recommend that all Irish Wolfhounds, especially those used for breeding, have CERF examinations annually throughout their life. The information derived from these exams will help the individual breeder and the breed club to avoid heritable ocular diseases with potential for blindness from becoming common in this breed.

Pneumonia *What You Need to Know*

by Kathy Wilson

Why You Need to Know

Pneumonia in the Irish Wolfhound can become life-threatening so quickly that it is imperative for owners and their veterinarians to recognize this disease and its serious nature. A positive outcome depends upon prompt treatment. Diagnosing pneumonia is not always easy, because wolfhounds are notoriously 'stoic' and may not act particularly ill early in the disease, and because the first symptoms can be somewhat vague and may vary from case to case. Because of these factors, a dog can be very ill indeed before it becomes obvious that something is wrong.

Most cases of pneumonia in dogs are related to some 'predisposing factor.' Typical predisposing factors include other illnesses (kennel cough complex or distemper virus, for example), aspiration into the lungs (most commonly in anesthetized dogs, or dogs who may have swallowing or esophagus problems or laryngeal paralysis), or systemic infection (sepsis). Nonetheless, many wolfhound owners have had the experience of a hound becoming desperately ill with pneumonia without any obvious predisposing factor. A hound can seem perfectly fine and then, within a matter of hours, be seriously ill. Survival can depend upon rapid treatment with antibiotics, so owners and vets must be sensitized to the possibility that a sick hound has pneumonia even if none of the ordinary predisposing factors are present. IWs may very well have an underlying susceptibility which is currently under investigation by researchers at the University of Pennsylvania, so tell your veterinarian to keep that fact in mind if he seems unwilling to initiate treatment.

A new strain of the canine influenza virus has spread from greyhound racing kennels in Florida to dog shows in the southeast. Since this is a new strain, no dogs have immunity. Most dogs experience only mild upper respiratory symptoms, but some do get pneumonia, with a death rate between 1% and 5%, so beware.

Symptoms

If your dog develops pneumonia, the first two things you may notice are lethargy and loss of appetite. Some hounds run fevers, often very high, while others do not. Probably the most universal symptom in the IW is the typical "pneumonia posture" of extended neck and head, which the wolfhound assumes to make breathing easier and take in more air. The neck and head are lowered, level with the back, and the head is held straight out. Usually a wolfhound with pneumonia will not be comfortable lying on its side. Most wolfhounds don't have nasal secretions with pneumonia, although some may. Some may also display rapid or difficult breathing early on. In some cases a hound will appear to have abdominal distress. A dog displaying signs like these needs to see a vet as quickly as possible. Suspected pneumonia in an Irish Wolfhound can never be taken lightly.

Diagnostic Tests

X-rays may or may not help your vet diagnose pneumonia. Clinical evidence shows that a wolfhound can be gravely ill and in danger even before changes in the lung tissue can be visualized on an X-ray, so a clear chest X-ray does not rule out pneumonia. Auscultation (listening to the lungs) is frequently, but not always, helpful.

The lungs can be cultured using a tracheal wash if the hound is stable enough to undergo light sedation. This procedure is valuable because results can help guide treatment choice, especially if the IW does not respond to initial antibiotic therapy. However, your vet must initiate antibiotic therapy before results are obtained. Fungal infections display a typical pattern on chest x-rays, but secondary bacterial infection is usually present as well. If an IW does not improve, or relapses when antibiotics are discontinued, it is prudent to rule out fungal infection. Depending on your area, blastomycosis and valley fever are two fungal diseases which can be devastating if left untreated.

Dr. Phil Padrid, a specialist in respiratory disease and a regional medical director of VCA Animal Hospitals, also recommends monitoring blood gases (or pulse oximetry, if blood gas monitoring is not available) as a more reliable tool than x-ray films for assessing a dog's condition.

Infectious Agents and Antibiotics

Wolfhounds with pneumonia may have a number of different types of bacteria in their lungs: streptococci, staphylococci, e. coli, etc, may be seen alone or in combination. Mycoplasma and fungal infections are also possibilities. Dr. Padrid suggests it is not a good idea to discount anaerobic bacteria such as e. coli and klebsiella when choosing antibiotic therapy. He recommends 3 weeks of Baytril and Antirobe be given together to cover a broad range of both aerobic and anaerobic, gram-positive and -negative, pathogens. Dr. Margret Casal, University of Pennsylvania Veterinary School, suggests Zithromax, an antibiotic belonging to the class called macrolides, may be a good first choice for pneumonia, because it is effective against a variety of organisms and can be given in one single dose per day. In addition, Zithromax remains at therapeutic levels in the bloodstream for up to ten days after treatment is discontinued.

There are a number of antibiotics in several different classes (including macrolides, fluoroquinolones, cephalosporins) that are available for use in dogs with pneumonia. Among the drugs which are frequently prescribed, Baytril and Zeniquin (fluoroquinolones), Keflex and Naxcel (first- and second-generation cephalosporins) are a few of the other drugs which have proven successful in some individual cases of IW pneumonia. Whatever your veterinarian selects, if your IW does not begin to improve rapidly, your veterinarian must consider either adding a second drug or switching drugs.

Additional Therapy

In addition to antibiotic treatment, dogs with pneumonia need to be kept well-hydrated. This may require IV or subcutaneous fluids. Sometimes expectorant medicines (like Mucinex, available over the counter in your drug store) help clear the lungs, but cough suppressants should be avoided. Coupage, or rapidly tapping the chest wall, is excellent for helping your IW clear his lungs. Coupage should be performed three or four times each day.

It is also important for your IW to have light exercise, (especially important if your dog requires hospitalization, so make sure the caregiver knows this!) but remember that lung capacity is diminished. Just make sure your IW is not outside any longer than necessary in rainy or cold weather

You and your vet must carefully monitor your hound's progress. Again, pneumonia in Irish Wolfhounds is a very serious illness. Failing to treat promptly and aggressively can be fatal!

IMPORTANT REMINDER

Send Your IW's Blood to the IWF DNA Bank, and you never have to worry about sending it to any other studies—we will do it for you. Blood samples are automatically shared with research studies most beneficial to IWs. This includes the Osteosarcoma Genetic Study at Harvard/MIT!

If you haven't sent your IW's blood, please download the blood donation form at www.IWFoundation.org.

IW Epilepsy Research Article Now in Press

The Journal of the American Veterinary Internal Medicine Association will publish an article detailing epilepsy in the Irish Wolfhound in its upcoming issue. This article is the culmination of many years of research at the University of Pennsylvania, headed by principal investigator Dr. Margret

Casal. The researchers tracked the increased incidence of epilepsy over the last fifteen years in the Irish Wolfhound population. Clinical data and pedigrees from closely related Irish Wolfhounds were collected retrospectively and analyzed. The article characterizes this disease in Irish Wolfhounds, and also discusses the mode of inheritance. This research was undertaken under the auspices of the IW Seizure Study. For further information, visit their website at iwstudy.org.

IWAGS Raffle to Benefit Lymphoma Research

Dr. Karen Oberthaler of the University of Pennsylvania School of Veterinary Medicine has begun a preliminary investigation into lymphoma in the IW. If you have lost an IW to lymphoma, please contact Kathy Wilson at glenlorling@earthlink.net to obtain Dr. Oberthaler's the short questionnaire.

The Irish Wolfhound Association of the Garden State's 2005 raffle will raise money to fund this research. If you would like to purchase raffle tickets, visit the IWAGS website (www.iwags.org). The drawing will be held at the IWAGS Specialty, October 30 and 31, 2005.



A HELPING HOUND

Liver Shunt (PSS) in the Irish Wolfhound

by Anne Janis

Portosystemic shunt (also called PSS or liver shunt) is a serious, often fatal liver problem. In a normal dog, the circulatory system carries blood through the liver. The liver removes wastes and bacteria from the blood, and also takes in nourishment from the blood. In a dog with liver shunt, the circulation doesn't flow correctly through the liver, so these two important tasks don't happen. The problem is caused by a 'shunt,' or abnormal blood vessel, either inside or outside of the liver, that routes the circulation improperly. Because of this, the dog's liver does not get the nourishment it needs to stay healthy, and wastes and bacteria (which would have been removed if the liver were normal) end up accumulating in the bloodstream, poisoning the dog.

Most cases of liver shunt are inherited. A puppy born with this problem often begins to have difficulty after it is 6 weeks old. The puppy may be depressed, fail to gain weight and grow, have frequent digestive upsets, lose its vision, develop seizures, or show behavioral changes. A bile acids test can show whether or not a puppy has liver shunt. Sometimes, vets need to do an ultrasound examination as well. Occasionally, surgery can help a pup with liver shunt, but often the damage is so severe that the only humane course of action is euthanasia.

How prevalent is PSS in the US? We don't know for sure, the incidence in other countries gives an idea of what it might be here. Studies in the Netherlands, UK, and Norway have provided some sense of how prevalent PSS is in those nations. The last published paper (1998) by the research team at the University of Utrecht stated that the incidence was 3.1% and 2.3%

in two separate IW populations. The study done in the UK (1999) by Kerr & van Doorn involving the screening of IW puppies for PSS showed that the incidence in this population was 3.4%.

In the UK, there are no current percentages available, but an informal poll of breeders and observers regarding PSS estimates that the percentages seem to have dropped, possibly to about 1%, but it must also be pointed out that registrations have dropped *by half* in the last ten years.

The incidence in Norway may now be about 2% to 3%. In Belgium, it is speculated that about 1 PSS puppy is born in a year, but there are no formal studies to confirm this. According to Swedish pet insurance company records, 8 IWs were treated for PSS in 1999. There are about 200 pups born & registered each year in Sweden, which for 1999 would make the affected rate about 4%.

Since there are no current studies of PSS in the United States, let's see what happens if we use the numbers from those countries that

do have studies and/or can make educated guesses as to incidence in their homelands. The 1999 registrations for IWs in the US were about 1,125 puppies; in 2004, it was approximately 1050 puppies. Using a median percentage figure of 2%, the number of PSS puppies would be 22 for 1999 and 21 for 2004. Does that seem like too many puppies born suffering from this disease to you? Even if you divide the percentage of affected puppies by half, the number is still attention-getting. Recently, I took a random sample of risk analyses that were requested by US breeders and found that of the 39 analyses, all but two showed that the litters had some sort of risk for PSS. Food for thought.

With the use of frozen semen, the IW breeding world is getting smaller and smaller, and with it our gene pool. Prior to breeding, risk analysis is available to those who wish it – free of charge. After whelping, at the age of eight weeks, each puppy in every litter should be tested for PSS. As the only people responsible for the future of our breed, we need to start paying attention.



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