WESTIE FOUNDATION OF AMERICA, INC
Leading the Way to Westie Health

Westie WELLNESS

Questions? Comments? Suggestions?
www.westiefoundation.org
1-888-928-3843

IN THIS ISSUE

3 On The Health Front

4 Integumentary System
The Basics of Dermatitis and Atopic Dermatitis in Westies

12 Financial Report – Fiscal Year 2016

13 Canine Influenza Virus Notice

15 WFA Health Seminar

16 Grant 02176-A
Progress Report

17 Grant 01609
Progress Report

18 Grant 01609
Progress Report

Darlene Reilly, Editor
Reilly Designs, LLC • reillys44@gmail.com

Summer 2017

PRESIDENT'S MESSAGE

Bebe Pinter

Our hats are off to all the researchers who continue to work tirelessly to conquer diseases affecting Westies and other breeds. In addition to sponsoring the biobanking conference, the Westie Foundation of America (WFA) is providing 2017 grant funding for the following research studies:

1. Cancer Epigenome: The Effect of Specific Histone Lysine Methyltransferase Inhibition in Canine B-Cell Lymphoma ($5,000),
2. The Role of Complex Translocation Associated with TP53 Somatic Mutations for Aiding Prognosis of Canine Diffuse Large B-Cell Lymphoma ($5,000),
3. Defining the Genetic Basis of Inflammatory Bowel Disease ($4,300),
4. Is Defective Secretion of Antimicrobial Peptides Associated with Reduced Microbicidal Effects in Keratinocytes? ($3,300), and
5. Immunotherapy for the Treatment of Canine Atopic Dermatitis ($2,300), and
6. University of California Davis KCS Study ($1,500).

It was outstanding! We are delighted that the WFA Facebook auction in March was a great successful. Thank you donors, bidders, WFA directors and Advisory Council members who participated for making it happen. There were more than 450 donations and buy it now items that were packaged and shipped to winning bidders.

We are delighted to include another chapter from our ***The Westie Health E-Book*** in this Summer issue of *Westie Wellness* newsletter. "Dermatitis Basics and Atopic Dermatitis in Westies" is an important topic. Valerie A. Fadok, DVM, PhD updated the information. The disease ranks number one according to our survey results based upon input from Westie pet owners and breeders. Subtopics include The Basics of Allergic Dermatitis in Westies, Types of Allergic Dermatitis in Dogs, Treatment of Atopic Dermatitis, and Current Research on Atopic/Allergic Dermatitis.

According to the "Financial Report—Fiscal Year 2016", expense ratios included Program Services 69%, Fundraising 18%, and Management 13% (well within the guidelines for a 501 (c) (3) organization). Program Services includes grants for research and education projects, such as the Westie Wellness newsletter and

(Continued on page 2)

(President's Message continued from page 1)

sponsored health seminars. Thanks to our donors for their loyal support and WFA board of directors for its effective fiscal management.

"Canine Influenza Virus Notice" by Dr. Jerry Klein, Chief Veterinary Officer of the American Kennel Club provides up-to-date information about the recent outbreak of Canine Influenza Virus. Please discuss your dog's risk with your veterinarian to determine whether vaccination is recommended.

Research progress report summaries for three studies are included and will be posted to the WFA website. The studies include: (1) Intralymphatic Immunotherapy for the Treatment of Canine Atopic Dermatitis, (2) Defining the Genetic Basis of Inflammatory Bowel Disease, and (3) Use of Probiotic to Reduce the Symptoms of Inflammatory Bowel Disease. Please note highlighted information of interest in regard to Diabetes in the last portion of the report titled "Report to Grant Sponsor from Investigator:" Thank you donors for making these WFA grants possible!

We need your help and encourage you to support our mission by becoming an annual WFA donor. We are an active board for a canine foundation that is making real progress to improve health in the Westie breed. You may contact Jim McCain, Donor Manager at donormanager@westiefoundation.org or visit our website www.westiefoundation.org for assistance. In addition, I would be delighted to visit with you about what the WFA has accomplished and major projects and research underway.

Don't forget that if you wish to submit a Westie Remembrance or Tribute for that special Westie who has crossed to The Rainbow Bridge, please visit our website at http://www.westiefoundation.org/remembrances.html for the form. The form provides text and photo requirements as well as payment information. Allison Platt, WFA Webmaster, can assist you. Remembrances and Tributes remain on the WFA website indefinitely.

Thank you for your continued involvement and support of the WFA but most of all, your love of Westies!

Bebe Pinter

The Westie Foundation of America, Inc is a nonprofit corporation, recognized by the IRS as a 501 (C) (3) organization. The mission of the Foundation is to advance and support medical research to benefit the health and quality of life of West Highland White Terriers: and to further develop and communicate information regarding the health, care, breeding and quality of life of Westies to Westie owners, Westie breeders and veterinarians.

WESTIE FOUNDATION OF AMERICA, INC

Leading the Way to Westie Health

Request for Samples

RESEARCH PROJECT	SAMPLES NEEDED	CONTACT INFORMATION
Genetic marker for **Atopic Dermatitis**	Saliva swabs or blood samples from dogs with skin disease or from normal dogs 5 years of age or older from family lines free of allergies	Kim Williams North Carolina State University 919-513-7235 kdwilli4@ncsu.edu
Genetic susceptibility of **Transitional Cell Carcinoma (TCC) (Bladder Cancer)**	Blood samples from dogs diagnosed with TCC and dogs over the age of nine who have no known cancers	Gretchen Carpintero Ostrander Lab National Human Genome Research Institute 301-451-9390 Dog_genome@mail.nih.gov
Genetic marker for **Addison's Disease**	DNA from cheek cells and/or blood from affected dogs and unaffected dogs over the age of 7	Dr. A.M. Oberbauer UC Veterinary School (Davis) 530-752-4997 http://cgap.ucdavis.edu/
Clinical Features and Genetic Basis of **Idiopatic Pulmonary Fibrosis (IPF)**	Blood samples from dogs diagnosed with PF and healthy dogs over age 8 without lung disease	Drs. Ned Patterson and Peter Bitterman Katie Minor (contact) University of Minnesota 612-624-5322 minork@umn.edu
Idiopatic Pulmonary Fibrosis (IPF)	Cheek and/or blood samples from dogs diagnosed with pulmonary fibrosis	Dr. Victor J. Thannickal University of Alabama Sample collection coordinated by Dr. Pamela Whiting, DVM pgwhitingdvm@aol.com 707-529-9222 (cell/text) 707-837-8101 (clinic)
Dry Eye Syndrome (keratoconjunctivitis sicca)	Dogs diagnosed with dry eye and dogs over 7 years old with no ocular abnormalities *participants must be available for appointments at UC Davis Veterinary Center (CA)	Dr. Sara Thomasy UC Veterinary School (Davis) 530-752-1770 smthomasy@ucdavis.edu

For more information about any of the above projects visit
www.westiefoundation.org

On The Healthfront

By Kay McGuire, DVM, MS

The Westie Foundation (WFA) continues to work for you by selecting appropriate Research Grants to support. You can find several Grant updates later in this newsletter. We are very much aware of the health conditions that commonly affect our dogs, and we continue to monitor the recurrent health survey that can be found at www.offa.org. With Atopic Dermatitis leading the list of conditions that create discomfort for our dogs, be sure to read Dr. Valerie Fadok's article where she mentions new treatment options for affected animals.

There are many of you that have helped us support the above-mentioned grants by submitting blood and tissue samples necessary for research. The WFA is moving towards participation in a biobanking facility where these samples can be stored for the indefinite future. Our dream is to have a facility that can house DNA and/or tissue samples available for future research endeavors.

The WFA was one of five sponsors (AKC Canine Health Foundation, Morris Animal Foundation, Mars Veterinary, WFA and the Sidney E Frank Foundation) to support a Workshop held April 8-11, 2017 at Texas A&M University. This meeting brought together dedicated professionals from other Bio Specimen Repositories (NIH, Cornell University, Michigan State University, St. Petersburg State University, Pan-Smithsonian Cryo-Initiative and Colorado State University) to discuss the best practices in standardization and collection methods to provide long-term high quality, biological and environmental specimens for research purposes.

As October nears, we are excited about our upcoming Health Seminar to be held at the Kimberton Fire House, PA on October 5th, 2017. Margaret Casal, DVM, MS, PhD from the University of Pennsylvania will be our speaker. Dr. Casal is an Associate Professor in Molecular Genetics at the School of Veterinary Medicine and a Diplomate of ECAR (reproduction). The topic presented will be Neonatal Puppy Care and "Fading Puppy Syndrome." Please join us at 6:30 PM if you are able, we will be providing light refreshments for the talk and will be taping the presentation for our website.

In closing, the NEW Westie E-Books is up on our website, www.westiefoundation.org. This has been a large undertaking to update all information as well as adding chapters. The publication is 134 pages and we feel that this will be a book that every Westie owner and breeder will desire. We are moving to have it available in print and available for purchase soon.

Integumentary System

The Basics of Dermatitis and Atopic Dermatitis in Westies

Updated by Valerie A. Fadok, DVM, PhD
Westie Health E-Book

The Basics of Allergic Dermatitis in Westies

Dermatitis, or inflammation of the skin, is one of the most common medical problems affecting dogs. It has many causes, can take many forms, and can be difficult to diagnose and treat. Many Westie owners become frustrated searching for the underlying cause of the problem and for an effective means to control and cure it. To provide the basis for a discussion of atopic (allergic) dermatitis in Westies, this overview describes the basics of dermatitis, causes of dermatitis, and how veterinarians diagnose and treat dermatitis *(Figure 1)*. Skin is a complex organ, consisting of several types of cells with a variety of functions. Many of these cells are involved in the body's natural, protective inflammatory response to stimuli in the environment. In fact, without this inflammatory response, people and dogs would not survive cuts, bruises and other daily traumas, as well as exposure to infectious organisms like bacteria and fungi. Common signs of acute inflammation include redness, swelling, heat and pain at the site of injury. While many things in the environment can initiate the inflammatory response in the skin, hereafter referred to as dermatitis, this overview will focus on dermatitis associated with reactions to food, inhaled substances, parasites, hormones and bacteria.

Types of Allergic Dermatitis in Dogs

Urticaria: Urticaria, also known as hives, is a type of dermatitis that occurs more often in humans than in dogs. Dogs with urticaria have dry, elevated patches of skin (called wheals) that are itchy and that may or may not be reddened. When wheals are group together they form larger flattopped patches called plaques. In a related condition, "angioedema", these patches become moist and swollen. People with severe allergies to substances like bee venom develop urticaria and angioedema when stung. It is a Type I hypersensitivity reaction that occurs when allergies bind to IgE (allergic antibody) on mast cells. This binding results in the release of histamines which cause vasodilation. This accounts for the redness and accumulation of fluid in the skin lesions.

Urticaria and angioedema occur in response to environmental irritants, such as food, medication, insects, and plants, time in the sun or extreme high or low temperatures. Treatment of urticaria and angioedema ideally involves avoiding the

Figures 1 and 2 - Canine atopic dermatitis in Westies *(Photographs courtesy of Dr. William Miller, Cornell University)*

(Continued on page 5)

(Integumentary System continued from page 4)

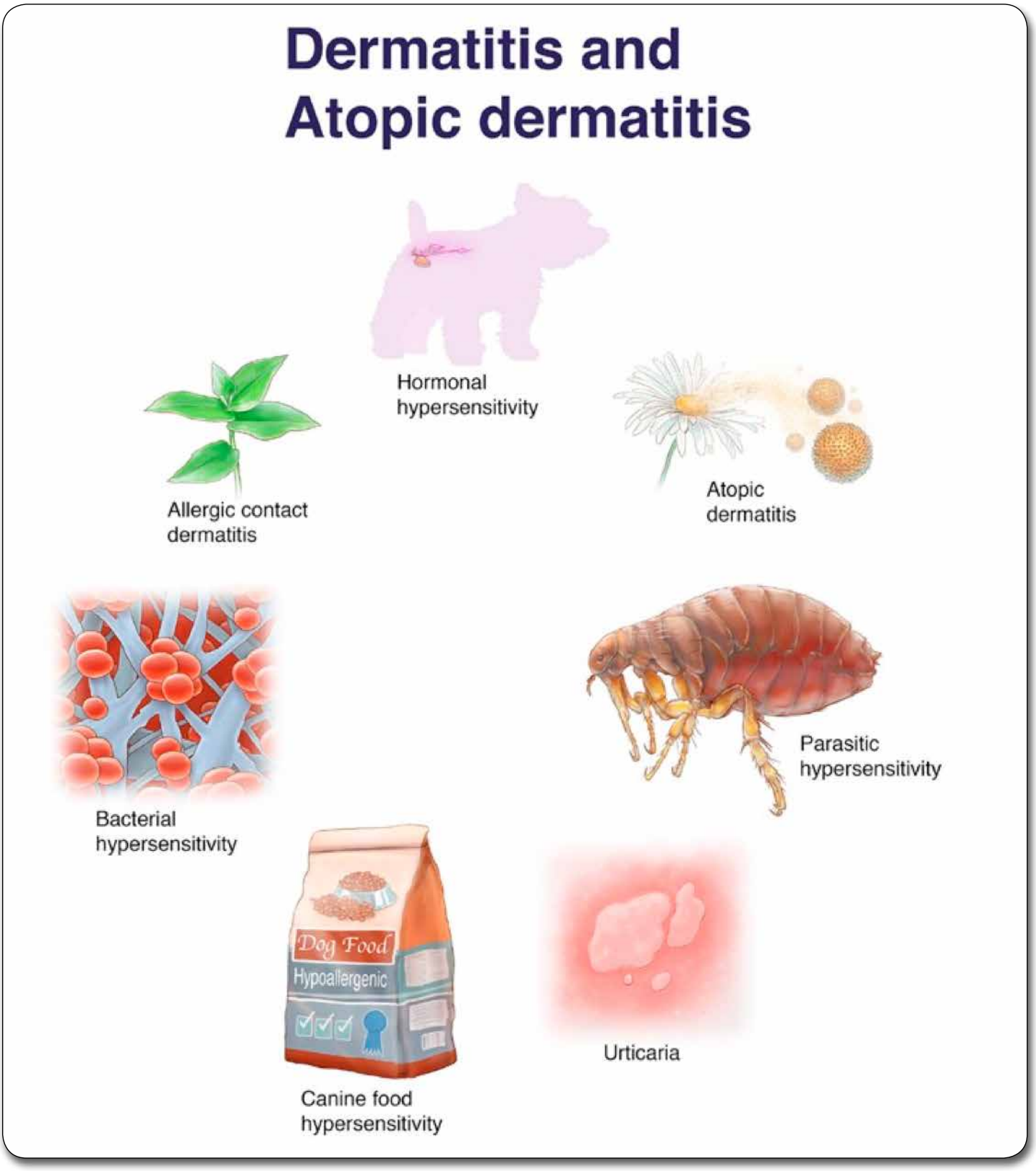


Figure 3 - An illustration depicting the most common causes of dermatitis and atopic dermatitis

(Continued on page 6)

(Integumentary System continued from page 5)

Common Clinical Findings

- Itching
- Scratching
- Hair Loss
- Thickened and Pigmentation of Skin

offending environmental stimulus and medicating the affected animal with epinephrine (anaphylaxis) and glucocorticoids and anti¬histamines. It is important to keep in mind that short coated dogs, such as English or French bulldogs, can suddenly develop bacterial infections in the skin. These infections can resemble urticaria, but require bathing and antibiotics for treatment. Occasionally, Westies can develop inflammatory skin infections than resemble urticaria. Consequently, it is important that owners consult with their veterinarians to ensure that lesions are true hives and not bacterial infections.

Parasitic hypersensitivity: Dogs with this condition develop dermatitis in response to the bites of parasites, such as fleas, ticks and other insects. The most common parasitic allergy is referred to as "flea allergy". Dogs that are sensitive to flea saliva become itchy and have large elevated domeshaped or flattopped lesions on their backs by their tails, the inner rear thighs and abdomen. Tick bites can produce dead skin around the bite and ulceration and possibly itching as well. Dogs also can become allergic to the bites of mosquitoes and Culicoides spp ("no-see-ums"). Dermatitis can also occur in response to intestinal parasites, although this is rare. There does not appear to be any breed predilection for parasitic hypersensitivity.

While the underlying mechanisms responsible for parasitic hypersensitivity dermatitis remain to be identified, the condition is presumed to occur in a manner similar to other allergies, with the body producing allergenspecific IgE and mounting an inflammatory response; there are delayed immunologic reactions as well. Treatment of affected dogs requires parasite control. For dogs with flea allergy, year round flea control is essential. For acute flare-ups, glucocorticoids or oclacitinib can be given to relieve the itch.

Allergic contact dermatitis: This condition, which also is called contact allergy or hypersensitivity, differs from atopic dermatitis because the allergen is part of something, such as a plant, medication or fabric that has touched the dog's skin. Fortunately, allergic contact dermatitis is rare in dogs. However, when it occurs, the skin becomes reddened and develops either small flat lesions that are colored differently from the dog's normal skin, similar larger lesions or, rarely, large fluidfilled lesions. Over time, this type of contact dermatitis results in hair loss, greater skin discoloration and raw or thickened skin. The areas typically affected are the bottoms of paws, the abdomen and the outsides of the ears. In years past, the chemicals and plastics in flea collars were common causes of this type of dermatitis, with lesions appearing around the neck. Fortunately, the newer types of flea collars are far less likely to initiate contact dermatitis. Dogs that develop contact dermatitis may or may not be itchy, depending on the dog and the allergen.

Allergic contact dermatitis is an example of a Type IV hypersensitivity, which means it is a cell-mediated reaction to an allergen or a delayed type hypersensitivity. Reactions occur usually 48-72 hrs after exposure to the contact allergen, making the offending allergen difficult to identify. The contact allergen interacts with specialized cells in the skin called Langerhan's cells, which then interact with T-lymphocytes. These T-lymphocytes then initiate the immune and inflammatory reaction. Although the precise mechanisms underlying allergic contact dermatitis remain to be determined, this condition is best treated by avoiding the allergen, if it can be identified, and medicating the dog with glucocorticoids, oclacitinib, or pentoxyfylline, drugs that reduce the inflammation.

Bacterial hypersensitivity: This type of dermatitis is a condition in which affected dogs are highly sensitive to a group of bacteria known as Staphylococcus. These dogs have itchy skin, with discrete pusfilled lesions. Based on these lesions, this condition also may be referred to as "pyoderma," which means "pusfilled skin". They also have crusts, and epidermal collarettes

(Continued on page 7)

(Integumentary System continued from page 6)

(circular lesions with a rim of scale). Although mechanisms responsible for bacterial hypersensitivity have yet to be identified, some dogs with recurrent pyodermas make IgE and IgG antibodies to Staphylococcus organisms. Treatment of bacterial hypersensitivity relies on bathing with chlorhexidine shampoos, and the use of antibiotics when necessary. Because of the emergence of methicillin resistance in canine Staphylococcus pseudintermedius, repetitive antibiotic use is to be avoided. For some dogs, treatment with staphylococcal bacterins can be helpful.

Yeast (Malassezia) hypersensitivity: Some dogs will become allergic to the yeast on their skin. Malassezia hypersensitivity results in intense itchiness in dogs and the infections often recur. Most dogs with recurrent yeast infections in the ears and skin make IgE (allergic) antibodies to the organism. These dogs require frequent bathing and treatment with oral antifungal agents. Some dogs will benefit from an allergy vaccine containing Malassezia extract.

Hormonal hypersensitivity: This rare condition is associated with apparent responses to the animal's sex hormones. Affected animals include intact females and males. With the increased use of topical hormone replacement therapy in humans, this condition can occur in neutered animals as well. Therefore, people using this form of therapy should apply the creams or ointments with gloves and to parts of the body their dog cannot contact. Affected dogs are itchy and have small elevated lesions on their rump, inner back of the thighs and in the genital and anal areas. Enlargement of the vulva and nipples is common. While it currently is not known how the skin becomes inflamed, the condition is successfully treated with neutering.

Canine food hypersensitivity: Food allergy in dogs is also known as adverse food reactions, primarily because some reactions to food are not actually allergic. In fact, pure food allergies, where the dogs' clinical signs are controlled completely with changes in the diet, are relatively rare. It is more common for a dog with atopic dermatitis to have reactions that are triggered by food as well as pollen or other substances. The immunologic basis of food allergy is complex, as some dogs appear to have a Type I hypersensitivity, making

IgE antibodies to food triggers, while other dogs do not. Some of the same immunologic abnormalities seen with atopic dermatitis are associated with food hypersensitivity in dogs.

Dogs are most commonly allergic to animal proteins in their diets; grain allergies are less common. Affected dogs typically have itchy, flaky skin, though some may develop thickening of the skin, changes in coloring, scales, crusts or redness. The ears, rump, lower legs and groin are the most commonly affected areas.

There is no diagnostic test for food allergy. There are serum tests that can be done, but they are not accurate enough to predict which foods will be safe to feed. The only reliable way to make a diagnosis is to eliminate specific components of a dog's and then challenge with that component. 'Limited ingredient diets' available over-the-counter are not sufficient as a diagnostic test because they are contaminated with chicken, beef, soy, and other ingredients not listed on the label. These diets are not prepared to the same level of stringency as a veterinary prescription diet. Diet choice should be based on what the dog has eaten before. If a veterinary prescription diet is not appropriate, then a home-cooked diet balanced by a veterinary nutritionist can be fed. Presently, 96% dogs can be diagnosed with an 8-week food trial; during this trial, no treats, table scraps, rawhides, or flavored medications should be fed without consulting with the veterinarian first. At the end of the 8-week period, if improvement is seen, then diet challenges should be done to identify the triggers. At that point, the dog can be transitioned to an over-the counter diet for long term maintenance. The itchiness associated with food allergies can be controlled during the trial with oclacintinib or glucocorticoids (steroids).

Atopic dermatitis: This is a genetically predisposed hypersensitivity to environmental allergens to which normal dogs do not respond. These allergens include pollens, molds, dusts, danders, insects and mites (house dust and storage mites). Some dogs become allergic to Staphylococcus and Malassezia, and some dogs become allergic to proteins in their food. Genomic diagnostic tools are being used to identify the genes associated with the development of atopic dermatitis in dogs.

Two types of genes are involved: 1) those associated with the immune system and 2) those involved with the skin barrier. Dogs with atopic dermatitis have a dysregulated immune system,

(Continued on page 8)

(Integumentary System continued from page 7)

causing immune cells to produce the cytokines (protein messages that cells use to communicate with each other) that underlie the dog's clinical signs. These clinical signs include itchiness and inflammation. As a result, IgE antibodies are developed that are directed against specific allergens. Some of these cytokines, such as IL-31, bind directly to nerves to cause itch.

The other genes of importance cause the top surface of the skin, also known as the skin barrier, to be defective. This skin barrier consists of corneocytes (cells) embedded in layers of lipid (fats, particularly ceramides, cholesterol, fatty acids). When functioning normally, this barrier keeps the skin moisturized and prevents the penetration of allergens and microbes. Dogs with atopic dermatitis have a disrupted barrier, causing water to leak from the skin and allergens and microbes to be absorbed. The allergens and microbes activate the defective immune system, resulting in the itch and inflammation. Since allergens are absorbed directly through the skin, lesions are most evident on parts of the body that are sparsely haired. Interestingly, there are breed differences in some of the genes affected, with many breeds having a defect in a skin gene called filaggrin; Westies, however, do not!

There is no diagnostic test for atopic dermatitis. It is diagnosed based on history and clinical signs, and by ruling out other causes of itch (parasites, infections). Allergy testing is only done if immunotherapy (i.e., allergy vaccine) will be used. It has been demonstrated that response to an allergy vaccine can be just as good with a serum test as with an intradermal test. The key to success with an allergy vaccine is to be patient and give it at least a year to work. In the meantime, other approaches are taken to keep the dog comfortable.

Treatment of Atopic Dermatitis

Treatment of atopic dermatitis requires addressing the disease from multiple perspectives; this is called a multimodal approach. Although this disease is lifelong and not curable, it is manageable using a combination of the following five treatments.

First, we avoid what we can avoid. Practically speaking, this means controlling exposure to ectoparasites and known food triggers, Consequently, all dogs with atopic dermatitis should be on good flea control throughout the year, because exposure to fleas makes their disease flare. It is not uncommon for atopic dogs to get other ectoparasites, including scabies mites, so vigilance for ectoparasites is very important. Clearly, there's no way to avoid access to pollens and other allergens.

> *"It is important to control inflammation and itchiness to give other treatments time to work."*

Second, we recommend allergy testing and immunotherapy (i.e., allergy vaccine), particularly for dogs with clinical signs that occur regardless of the season. Immunotherapy is the only treatment available that changes the abnormal immune response in this lifelong disease. Fortunately, this can be achieved using sublingual immunotherapy (allergy drops) which can be just as effective as injections. However, it is unrealistic to expect that an allergy vaccine will control all clinical signs in all dogs. Use of an allergy vaccine should be considered successful if it reduces the dog's need for daily medication. In many cases, the allergy vaccine will help the medications work better. If an allergy vaccine can be used in young dogs when the immune system is most malleable, it may be needed for only 3-5 years. It is important to recognize, however, that some dogs may require their allergy vaccine for life.

Third, infections can be controlled with bathing and the use of antibiotics and antifungal agents when needed. Bathing is the primary approach to infection control because of the emergence of methicillin resistance (antibiotic resistance) in canine Staphylococcus pseudintermedius. Bathing allergic dogs every week helps remove allergens from the skin. A veterinary formulated shampoo containing 2-4% chlorhexidine is best, and shampoos containing lipids (phytosphingosine, ceramides, fatty acids) can prevent the drying effects of baths and help repair the skin barrier. If needed, antibiotics can be given. For dogs with yeast infections, oral antifungal agents can also be used.

Fourth, the abnormal skin barrier can be repaired by optimal nutrition and by the application of lipids directly to the skin. A high quality diet with the right balance of omega-6/omega-3 fatty acids is recommended. Over time, these fatty acids can help the skin repair itself. Topical application of lipids (phytosphingosine, ceramides, and/or fatty acids) also is recommended; these can be in the form of shampoos, sprays, foams, and spot-ons. Many dogs may require twice weekly baths initially, but the frequency can be reduced to a manageable level (e.g., twice monthly).

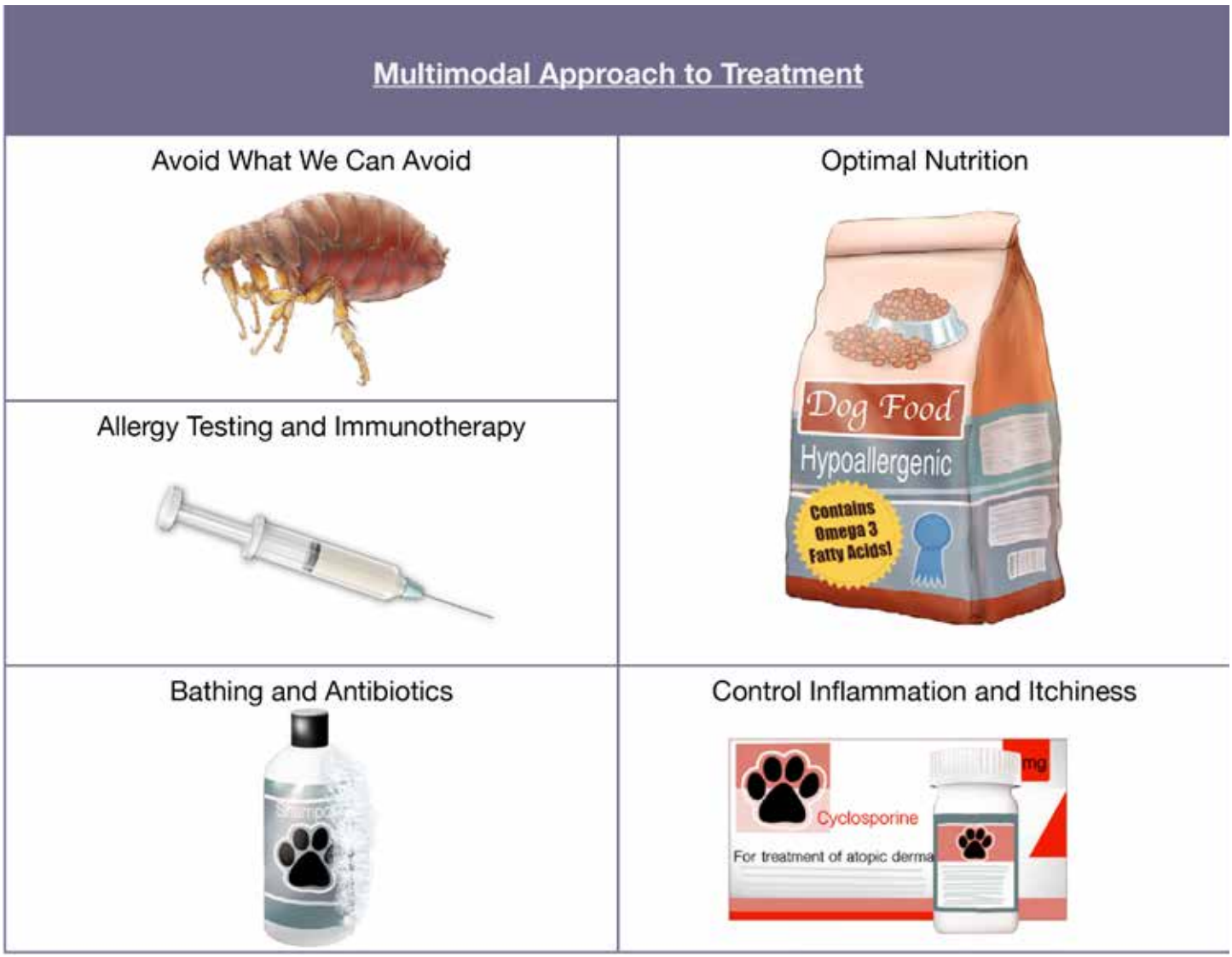
(Continued on page 9)

(Integumentary System continued from page 8)

Fifth, it is important to control inflammation and itchiness to give other treatments time to work. Medications traditionally used for this include glucocorticoids (steroids), cyclosporine, oclacitinib, and a monoclonal antibody directed against the molecule (IL-31) underlying the itch. When used alone, antihistamines are rarely effective. However, they can help some dogs when used in combination with other medications.

Glucocorticoids (steroids) have been used traditionally because they work quickly to reduce itch and inflammation. Nearly every cell in the body has receptors that bind glucocorticoids, hence the wide array of potential side effects. Glucocorticoids affect metabolism, immune function, skin barrier, muscle and ligaments, the Gastro-Intestinal (GI) system, and behavior. They are not ideal for long term use. Even in the short term, increased thirst, increased urination with accidents in the house, and behavioral changes (lethargy, aggression) can be seen. Dogs needing glucocorticoids to live should be administered them every other day. Glucocorticoids given orally or by injection could have a negative impact on pregnancy, so they are not used in pregnant or lactating dogs. Glucocorticoids will interfere with intradermal testing and some serum testing for allergies, so treatment needs to be stopped several weeks before these tests are performed. Glucocorticoids inhibit almost all inflammation, so the presence of infections can be masked.

Cyclosporine (Atopica®, Elanco), a drug that decreases the production of cytokines and that is used in human transplant patients, has been used over the last decade in atopic dogs. It is given orally daily for 4-6 weeks, then slowly reduced to the frequency that controls the disease.



(Continued on page 10)

(Integumentary System continued from page 9)

Some affected dogs may need to take it daily for best effects. The most common side effects are vomiting and diarrhea (30-40% dogs), but severe infections have occurred in rare instances. The efficacy of cyclosporine is dependent on a microemulsion process that makes it more absorbable. Other formulations of the drug may be less effective for dogs, particularly those that are compounded. While this drug should not be given with a full meal, a small amount of food will not inhibit its efficacy. Cyclosporine has not been studied in breeding, pregnant, or lactating dogs. Cyclosporine does not interfere with intradermal or serum testing for allergies. It is not likely to work well in dogs that have fleas or infections.

Oclacitinib (Apoquel®, Zoetis) is a medication that works by inhibiting an enzyme (Janus kinase 1) that blocks the intracellular signal that occurs after the cytokine binds to its receptor. In essence, it is a small molecule that enters the dog's cells where it blocks the messages that initiate inflammation and itchiness. It is approved for use in dogs one year of age or older, and can be given twice daily for up to 14 days, then once daily. Vomiting and diarrhea are the most common side effects, but these occur in less than 5% of dogs. Very rarely, serious infections have been associated with this medication. Its use has not been studied in breeding, pregnant, or lactating dogs. This medication can work in any type of allergic itch and inflammation. Oclacitinib does not does not interfere with intradermal or serum testing for allergies. Like cyclosporine, it is not likely to work well in dogs that have fleas or infections.

Caninized monoclonal antibody directed against canine IL-31 (Cytopoint®, Zoetis), the molecule that initiates itchiness in atopic dermatitis, is a biologic agent rather than a drug. It is approved for use in dogs that have a diagnosis of atopic dermatitis to help reduce itch and inflammation. Because it is a monoclonal antibody and not a drug, it can be used to treat dogs of any age, and dogs being treated with other drugs. It can also be used in dogs with serious infections (e.g. pneumonia, septicemia), cancer, or other medical conditions for which glucocorticoids, cyclosporine, or oclacitinib would not be used. It is given by injection every 4-8 weeks by a veterinarian. This monoclonal antibody does not interfere with intradermal or serum testing for allergies. Monoclonal antibodies, while used routinely in human medicine, are new to veterinary medicine. For more information, visit www.cytopoint4dogs.com

Current Research on Atopic/Allergic Dermatitis

Due to the clinical impact of atopic/allergic dermatitis in dogs, it is important that both basic and clinical research be performed on these diseases. In this section, three recent articles that provide clinically relevant information about these conditions will be reviewed.

Gonzales AJ, Fleck TJ, Humphrey WR, Galvan BA, Aleo MM, Mahabir SP, Tena JK, Greenwood KG, McCall RB. IL-31- induced pruritus in dogs: a novel experimental model to evaluate anti-pruritic effects of canine therapeutics. Vet Dermatol. 2016 Feb;27(1):34-e10.

Dogs with atopic/allergic dermatitis develop itchy skin that then requires treatment, typically with medications that alter the inflammatory/immune responses to allergens. The purpose of this study was to determine if an experimental model of allergic skin conditions could be developed by administering a specific inflammatory mediator called interleukin-31, that often is present in dogs with naturally-occurring skin diseases. After successfully inducing the itching behaviors that occur in dogs with these diseases using this approach, the investigators then were able to compare changes in the dogs' behaviors after administration of different anti-

(Continued on page 11)

(Integumentary System continued from page 10)

inflammatory compounds (prednisolone, dexamethasone and oclacitinib). As a result of this study, it now is possible to test the efficacy of new compounds in a reproducible way.

Hensel P, Santoro D, Favrot C, Hill P, Griffin C. Canine atopic dermatitis: detailed guidelines for diagnosis and allergen identification. BMC Vet Res. 2015 Aug; 11:196.

This paper is open access and can be freely downloaded. The International Committee for Allergic Diseases in Animals has reviewed the veterinary literature and developed guidelines for the diagnosis of canine atopic dermatitis. The diagnostic approach is to rule out other skin conditions with clinical signs that resemble or overlap with atopic dermatitis, to carefully interpret the history and clinical signs of each dog affected with atopic dermatitis, and to utilize allergy testing with the primary purpose of pursing allergen-specific immunotherapy.

Olivry T, DeBoer D, Favrot C, Jackson HA, Mueller RS, Nuttal T, Prelaud P. Treatment of canine atopic dermatitis: 2015 updated guidelines from the International Committee on Allergic Diseases of Animals (ICADA). BMC Vet Res. 2015 Aug; 11:210.

This paper is open access. It reviews the literature published since the publication of the 2010 guidelines. It summarizes those guidelines and updates them where necessary. Emphasis is on individualizing the program for each dog and using multimodal therapy.

Michels GM, Ramsey DS, Walsh KF, Martinon OM, Mahabir SP, Hoevers JD, Walters RR, Dunham SA. A blinded, randomized, placebo-controlled, dose determination trial of lokivetmab (ZTS-00103289), a caninized, anti-canine IL-31 monoclonal antibody in client owned dogs with atopic dermatitis. Vet Dermatol. 2016 Dec;27(6):478-e129.

This paper describes the first use of a caninzed monoclonal antibody in the treatment of atopic dermatitis. The monoclonal antibody is directed against canine IL-31, a major cytokine that mediates the itch and inflammation seen with AD. When given subcutaneously, dogs experienced significant relief compared to those dogs treated with placebo, and this relief persisted for at least one month.

Acknowledgements

Mr. Matthew Crotts and Ms. Stephanie Pfeiffer, medical illustrators in Educational Resources in the College of Veterinary Medicine at the University of Georgia, created the illustrations used in this chapter.

Relevant References

Beccati M, Martini V, Comazzi S, Fanton N, Cornegliani L. Lymphocyte subpopulations and Treg cells in dogs with atopic dermatitis receiving ciclosporin therapy: a prospective study. Vet Dermatol. 2016 Feb;27(1):17-e5.

Bradley CW, Morris DO, Rankin SC, Cain CL, Misic AM, Houser T, Mauldin EA, Grice EA. Longitudinal Evaluation of the Skin Microbiome and Association with Microenvironment and Treatment in Canine Atopic Dermatitis. J Invest Dermatol. 2016 Jun;136(6):1182-90.

Colombo S, Abramo F, Borio S, Albanese F, Noli C, Dedola C, Leone F. Pustular dermatitis in dogs affected by leishmaniosis: 22 cases. Vet Dermatol. 2016 Feb;27(1):9-e4.

Cosgrove SB, Cleaver DM, King VL, Gilmer AR, Daniels AE, Wren JA, Stegemann MR. Long-term compassionate use of oclacitinib in dogs with atopic and allergic skin disease: safety, efficacy and quality of life. Vet Dermatol. 2015 Jun;26(3):171-9.

DeBoer DJ, Verbrugge M, Morris M. Clinical and immunological responses of dust mite sensitive, atopic dogs to treatment with sublingual immunotherapy (SLIT). Vet Dermatol. 2016 Jan 8. doi: 10.1111/vde.12284. [Epub ahead of print].

Gadeyne C, Little P, King VL, Edwards N, Davis K, Stegemann MR. Efficacy of oclacitinib (Apoquel®) compared with prednisolone for the control of pruritus and clinical signs associated with allergic dermatitis in client-owned dogs in Australia. Vet Dermatol. 2014 Dec;25(6):512-8.

Gimmler JR, White AG, Kennis RA, Cruz-Espindola C, Boothe DM. Determining canine skin concentrations of terbinafine to guide the treatment of Malassezia dermatitis. Vet Dermatol. 2015 Dec;26(6):411-e96.

Hauck V, Hügli P, Meli ML, Rostaher A, Fischer N, Hofmann-Lehmann R, Favrot C. Increased numbers of FoxP3-expressing CD4(+) CD25(+) regulatory T cells in peripheral blood from dogs with atopic dermatitis and its correlation with disease severity. Vet Dermatol. 2016 Feb;27(1):26-e9.

Kim H, Rather IA, Kim H, Kim S, Kim T, Jang J, Seo J, Lim J, Park YH. A Double-Blind, Placebo Controlled-Trial of a Probiotic Strain Lactobacillus sakei Probio-65 for the Prevention of Canine Atopic Dermatitis. J Microbiol Biotechnol. 2015 Nov 28;25(11):1966-9.

Little PR, King VL, Davis KR, Cosgrove SB, Stegemann MR. A blinded, randomized clinical trial comparing the efficacy and safety of oclacitinib and ciclosporin for the control of atopic dermatitis in client-owned dogs. Vet Dermatol. 2015 Feb;26(1):23-30.

Marsella R. Fixing the skin barrier: past, present and future--man and dog compared. Vet Dermatol. 2013 Feb;24(1):73-6.

Meason-Smith C, Diesel A, Patterson AP, Older CE, Mansell JM, Suchodolski JS, Rodrigues Hoffmann A. What is living on your dog's skin? Characterization of the canine cutaneous mycobiota and fungal dysbiosis in canine allergic dermatitis. FEMS Microbiol Ecol. 2015 Dec;91(12).

Michels GM, Walsh KF, Kryda KA, Mahabir SP, Walters RR, Hoevers JD, Martinon OM.

A blinded, randomized, placebo-controlled trial of the safety of lokivetmab (ZTS-00103289), a caninized anti-canine IL-31 monoclonal antibody in client-owned dogs with atopic dermatitis. Vet Dermatol. 2016 Dec;27(6):505.

Oberbauer AM, Belanger JM, Bellumori T, Bannasch DL, Famula TR. Ten inherited disorders in purebred dogs by functional breed groupings. Canine Genet Epidemiol. 2015 Jul 11;2:9.

Panteri A, Strehlau G, Helbig R, Prost C, Doucette K. Repeated oral dose tolerance in dogs treated concomitantly with ciclosporin and oclacitinib for three weeks. Vet Dermatol. 2016 Feb;27(1):22-e7.

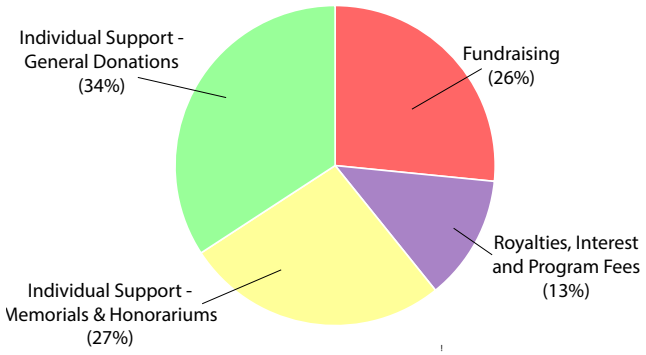
Popiel J, Cekiera A. Comparison of IgE test results with intradermal skin tests for dust mites and storage mites in atopic dogs. Pol J Vet Sci. 2015;18(2):351-6. Sivajothi S, Sudhakara Reddy B, Rayulu VC. Demodicosis caused by Demodex canis and Demodex cornei in dogs. J Parasit Dis. 2015 Dec;39(4):673-6.

Steffan J, Favrot C, Mueller R. A systematic review and metaanalysis of the effi¬cacy and safety of cyclosporine for the treatment of atopic dermatitis in dogs. Vet Dermatol 2006; 17:3–16.

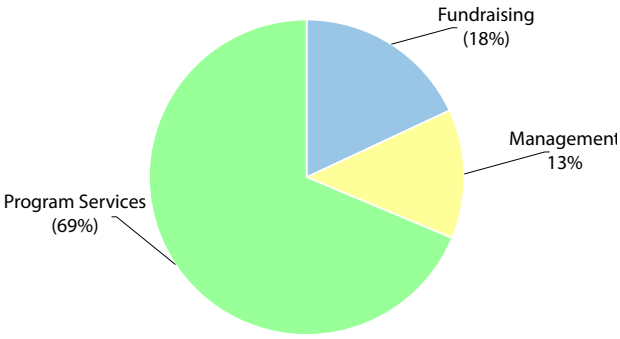
Financial Report – Fiscal Year 2016

Gary C. Sackett, Treasurer

Revenue = $63,106



Expenses = $42,250



REVENUE

Individual Support Revenue from individuals supporting the Westie Foundation of America, Inc's (WFA) mission in 2016 totaled $38,359 (61%) with an additional $7,977 in royalties from Affiliate programs/ Interest (13%) and $16,770 from fundraising efforts including the Facebook auctions (26%).

ASSETS

Endowment Funds All memorials and honorariums are added to the Donor Restricted Endowment Fund which now totals $274,462. Through the legacies of Nancy Schoch and Daphne Gentry, we have significant funds dedicated to Pulmonary Fibrosis research and a veterinary scholarship. Our Donor Restricted Endowment Fund totals 53% of our assets. The income from these funds may be used to fund projects, but the principal is restricted by the Board of Directors and invested carefully to maintain principal while bringing a reasonable return. In 2016, our endowment fund was invested in four mutual funds and, has grown 9.3%. These are tracked monthly to ensure conformance with the WFA's investment strategy.

Unrestricted Funds The WFA has an unrestricted fund balance of $247,053 including cash, CDs and Mutual Fund investments. This is used to fund management operations, fundraising and program services.

The inventory was valued at $1,897 at year end.

LIABILITIES

Future Projects WFA retains liabilities of $75,350 to fund a planned Cancer connection workshop (deferred revenue of $33,000) and publishing the results of the 2014 workshop (pending the vendor for $42,350).

EXPENSES

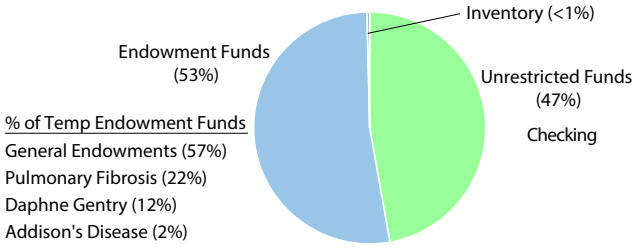
Program Services In 2016, WFA continued support of research and education related to diseases affecting the West Highland White Terrier and held health seminars at the Roving and National Specialties weekend.

Research Funds spent on research were almost all matched by funds from the AKC Canine Health Foundation and Morris Animal Foundation, compounding the benefits our Westies will receive. Grants addressed further Investigation into Atopic Keratinocytes ($3,000), Treatment of Atopic Dermatitis ($3,000), Capturing Tumor Cells in Blood ($2,000) and Defining Genetic Basis of IBD ($2,000). The WFA paid our grant of $4,900 to the University of Georgia for completion of the update the Westie e-book and contributed $5,000 to a Workshop at Texas A&M to explore methods of sample preservation for future research.

Education Education expenses included our website ($385), the outstanding ***Westie Wellness*** ($8,195), and our sponsored seminars ($441).

Management and Fundraising These expenses were kept to a minimum by careful allocation of resources and the fact that all officers, directors, and committee members are volunteers.

Assets = $523,413



% of Temp Endowment Funds
General Endowments (57%)
Pulmonary Fibrosis (22%)
Daphne Gentry (12%)
Addison's Disease (2%)
Skin Issues (6.5%)
Irritable Bowel (0.5%)

Canine Influenza Virus Notice

By Dr. Jerry Klein, Chief Veterinary Officer of AKC | May 31, 2017

This notice is being sent out to provide up-to-date and accurate information about the Canine Influenza Virus to help prevent the spread of the virus to healthy(unexposed) dogs. The information provided is not intended to alarm dog owners and handlers.

There are recently confirmed cases of the Canine Influenza Virus (H3N2 strain) that was first brought to and identified in Chicago, Illinois in the spring of 2015. The most recent outbreaks concern the following states: Florida, Georgia, Illinois, Kentucky, Missouri, North Carolina, South Carolina, and Texas.

Canine Influenza Virus is an extremely contagious airborne disease that is easily spread among dogs, and in rare instances, can be contagious to cats. If you believe one of your dogs may have contracted the Canine Influenza Virus, immediately isolate it from other animals and contact your veterinarian.

Here is some additional information about Canine Influenza Virus and tips for how to minimize the risk and reduce the spread of the disease:

Canine Influenza Virus

- Canine Influenza Virus is spread through:
- Close proximity to infected dogs (it is airborne and can travel up to 20 ft.)
- Contact with contaminated items (bowls, leashes, crates, tables, clothing, dog runs, etc.)
- People moving between infected and uninfected dogs
- 80% of all dogs that are exposed to the virus will contract it
- The virus lives up to 24 hours on soft surfaces and up to 48 hours on hard surfaces.
- Some exposed dogs will be subclinical carriers - meaning some dogs will contract and spread the virus without showing symptoms.
- Dogs show clinical signs within 24-48 hours and can shed the virus for up to 28 days from exposure.
- Most dogs will completely recover with proper treatment.
- Dogs that regularly interact with dogs outside of their own family or frequent places where many dogs gather are most susceptible to exposure to Canine Influenza Virus.

Symptoms

- Dry, hacking cough (similar to kennel cough)
- Lack of appetite
- Lethargy
- Discharge from the nose or eyes
- Fever (normal temperature is 101 – 102)

Prevention

- The best protection is vaccination. There is now a single vaccination for both the H3N2 and H3N8 strains of the virus. The vaccination requires a booster shot two weeks after the initial vaccine. Vaccination provides the best chance of immunity within 7-14 days of booster shot.
- Isolate sick animals and keep them isolated for up to 30 days after symptoms appear.
- Practice good sanitation. Use a bleach and water mixture diluted to 1-part bleach x 30 parts water to disinfect common areas such as tables, bowls, leashes, crates, etc. Allow items to thoroughly air dry for a minimum of 10 minutes before exposing dogs to them. Bleach breaks down quickly so solution should be made daily. Keep in mind that bleach becomes inactive in UV light. If mopping use two buckets so as not to cross contaminate areas

(Continued on page 14)

(Canine Influenza Virus continued from page 13)

- Wash your hands frequently, ideally between handling different dogs. At the very minimum, hand sanitizer should be used between handling dogs.
- Use disposable gowns or wipe down clothing and shoes with a bleach solution between dogs or after leaving an area where dogs congregate.
- Food/water bowls should be made of stainless steel instead of plastic because scratched plastic is hard to fully disinfect.
- Use a bleach and water mixture diluted to 1-part bleach x 30 parts water to disinfect common areas including show floors, grooming tables, ring gates, in-ring examination tables and ramps, and x-pens. Allow solution to completely dry (at least ten minutes in order to assure virus has been killed). Bleach breaks down quickly so solution should be made daily. Keep in mind that bleach becomes inactive in UV light. If mopping use two buckets so as not to cross contaminate areas.
- When wiping down hard surfaces paper towels are preferred over cloth.
- Consider having two exam tables at every ring so that they can be cleaned and allowed to air dry frequently in between classes.
- Provide hand sanitizer in each ring and in grooming areas.
- Exhibitors should consider grooming dogs at their cars instead of using grooming areas where dogs are in very close proximity.

Treatment

- Treatment of Canine Influenza Virus requires veterinary assistance. If you believe your dog may have Canine Influenza Virus, please contact your veterinarian immediately. Untreated, the illness may progress to pneumonia or other, more serious problems. H3N2 can lead to severe secondary pneumonia which can cause extremely sick dogs with potential fatalities.
- Most dogs take 2-3 weeks to recover from the illness.
- Any dog suspected of having Canine Influenza Virus should be immediately isolated from other dogs and should not attend dog shows, day care, grooming facilities, dog parks, or other places dogs gather. Dogs are contagious for up to 30 days once they have started showing symptoms.
- Contact your veterinarian to let them know that your dog may be showing symptoms of Canine Influenza Virus. If your dog is going to a veterinary hospital or clinic, call ahead to let them know you have a suspected case of Canine Influenza Virus. They may ask you to follow a specific protocol before entering the clinic to minimize the spread of the disease, including waiting in your car until they are ready to examine your dog.
- Keep sick dogs at home and isolated from other dogs and cats until you are certain the illness has run its course (typically 3-4 weeks).

Containment

- Any dog suspected of having Canine Influenza Virus should be immediately isolated from other dogs and should not attend dog shows, day care, grooming facilities, dog parks, or other places dogs gather. Dogs are contagious for up to 30 days once they have started showing symptoms.
- Contact your veterinarian to let them know that your dog may be showing symptoms of Canine Influenza Virus. If your dog is going to a veterinary hospital or clinic, call ahead to let them know you have a suspected case of Canine Influenza Virus. They may ask you to follow a specific protocol before entering the clinic to minimize the spread of the disease, including waiting in your car until they are ready to examine your dog.
- Keep sick dogs at home and isolated from other dogs and cats until you are certain the illness has run its course (typically 3-4 weeks).

Consideration for Event Venues

- Use a bleach and water mixture diluted to 1-part bleach x 30 parts water to disinfect common areas including show floors, grooming tables, ring gates, in-ring examination tables and ramps, and x-pens. Allow solution to completely dry (at least ten minutes in order to assure virus has been killed). Bleach breaks down quickly so solution should be made daily. Keep in mind that bleach becomes inactive in UV light. If mopping use two buckets so as not to cross contaminate areas.
- When wiping down hard surfaces paper towels are preferred over cloth.
- Consider having two exam tables at every ring so that they can be cleaned and allowed to air dry frequently in between classes.
- Provide hand sanitizer in each ring and in grooming areas.
- Exhibitors should consider grooming dogs at their cars instead of using grooming areas where dogs are in very close proximity.

Dr. Jerry Klein is a veterinarian in the emergency room at Chicago's largest veterinary emergency and specialty center. He was personally involved in treating hundreds of dogs sickened by the H3N2 virus during its initial outbreak in Chicago in spring of 2015.

WFA HEALTH SEMINAR

Proudly Presents

Thursday, October 5, 2017

Kimberton Fire Hall

Kimberton, PA

6:30 PM

Margret Casal, Dr med vet, PhD, Dipl. ECAR
Associate Professor of Medical Genetics, Pediatrics, and Reproduction

Neonatal Puppy Care and Fading Puppy Syndrome

Dr. Margret Casal obtained her veterinary degree from the University of Zürich in Switzerland and her Master's in Virology from the University of Bern, also in Switzerland. After working in small animal reproduction for several years at the University of Zürich, she came to the University of Pennsylvania's (PENN) Veterinary School for a residency in Medical Genetics. After the residency, she stayed at the PENN and completed a PhD in Gene Therapy and Genetics. Dr. Casal is specialized in veterinary genetics, pediatrics and reproduction. She is board certified in theriogenology by the European College of Animal Reproduction. Her clinical interests lie primarily in pediatric diseases of the cat and she has been working in the field of canine and feline reproduction for the past 25 years. Her research interests are focused on the characterization, genetic basis, and treatment of canine genetic skin disorders that also occur in humans. She has also been working on discovering the genes involved in idiopathic epilepsy and primary ciliary dyskinesia in the Irish Wolfhound.

RESEARCH PROGRESS REPORT SUMMARY

Grant 02176-A:
Intralymphatic Immunotherapy for the Treatment of Canine Atopic Dermatitis

Principal Investigator:
Dr. Andrea Lam, DVM

Research Institution:
Tufts University

Grant Amount:
$12,113.82

Start Date: 7/1/2015
End Date: 1/31/2017

Progress Report:
Mid-Year 2

Report Due: 1/31/2017
Report Received:
1/17/2017

(The content of this report is not confidential and may be used in communications with your organization.)

Original Project Description:

Atopic dermatitis (AD) is a genetically predisposed inflammatory skin condition affecting approximately 10% of dogs globally and is probably the most prevalent skin disease in all canines. Affected dogs manifest with itchy skin and ears and secondary infections. Clinical features are associated with IgE antibodies produced against indoor/outdoor environmental allergens. Breeds such as Boxers, Terriers, Retrievers, and Bulldogs are predisposed.

Current treatment options include antihistamines, corticosteroids, cyclosporine, oclacitinib, and allergen-specific immunotherapy (ASIT), as well as adjunctive topical and antimicrobial therapy. Antihistamines are effective in about 25% of dogs. Corticosteroids are extremely efficacious; however, side effects are common, thus long-term use is strongly discouraged. Cyclosporine is effective in many dogs with few serious adverse effects, but cost can be a limitation in large breed dogs. Oclacitinib has been shown to have good efficacy, but long-term side effects have not been studied. ASIT appears as the only treatment that is able to induce a clinical cure. However, the percentage of atopic dogs that respond to this treatment is only 60-70% and in many, the response is only partial.

It has been proposed that efficacy of subcutaneous ASIT is limited by the ability of the skin to stimulate the immune system. This study proposes to test an alternative route of administration using ASIT for this important skin condition. The investigator will test if direct administration of allergens into a peripheral lymph node may be more effective in stimulating an immunologic reaction, and thereby increasing the response rate, and potentially the cure rate, for canine atopic dermatitis.

Publications:

None at this time.

Report to Grant Sponsor from Investigator:

We have completed enrollment in the intralymphatic immunotherapy as a treatment for canine atopic dermatitis study.

The first enrolled patient has recently completed the 12-month review with excellent results. The owner has reported a complete lack of observed clinical signs for the first time since the dog developed atopic dermatitis. The second enrolled patient has unfortunately continued to struggle with relapsing infection. The third enrolled patient withdrew from the study following the first injection due to relapsing pneumonia (non-related). The final two patients are early in the post-treatment phase, thus it is too soon to tell how they will do long term.

No adverse reactions have been reported thus far and no complications have been associated with the simple protocol. With time, this may prove to be a novel and much more effective way to not only manage atopic dermatitis in our veterinary patients, but possibly provide a chance for cure.

Westie Wellness, the official publication of the Westie Foundation of America is mailed or emailed quarterly to all contributors. Westie Wellness is printed by Art Communication Systems in Harrisburg, PA. The opinions expressed in the articles herein are those of the authors and not necessarily of the editor or the Officers or Directors of the Westie Foundation. The editor reserves the right to edit all materials submitted for publication. The editor welcomes comments, suggestions, and expressions of opinions from the readership. No portion of Westie Wellness may be printed without the written permission of the editor.

(Continued on page 9)

RESEARCH PROGRESS REPORT SUMMARY

Grant 02002:
Defining the Genetic Basis of Inflammatory Bowel Disease

Principal Investigator:
Dr. Karin Allenspach, DVM PhD

Research Institution:
Royal Veterinary College, University of London

Grant Amount:
$119,268.00

Start Date: 10/1/2014
End Date: 9/30/2017

Progress Report:
Mid-Year 3

Report Due: 3/31/2017
Report Received:
3/30/2017

(The content of this report is not confidential and may be used in communications with your organization.)

Original Project Description:

Inflammatory Bowel Disease (IBD) is a group of disorders in which the intestinal tract has become invaded with the dog's own white blood cells leading to inflammation. Over time, this inflammation causes the intestine to become less efficient at absorbing nutrients from digested food and weight loss, and vomiting or diarrhea often result. IBD can be controlled, but not cured. The cause of IBD is poorly understood, but it appears that genetics, diet, intestinal bacteria, and abnormalities of the dog's immune system all play a role. Dr. Allenspach has recently identified genetic markers known as SNPs (single nucleotide polymorphisms) which she believes contribute to disease susceptibility. Beyond genetics, this research group has mechanistic data showing one of the putative mutations contributes to the inflammation seen in the intestine of dogs with IBD. In order to find all underlying genetic factors that could contribute to disease, they propose to perform a genome-wide association study. This study will lead to the development of new diagnostic and therapeutic avenues for canine IBD as has already been the case in people with IBD.

Grant Objectives:

The objectives of the present study are to identify single nucleotide polymorphisms (SNPs), which may confer genetic susceptibility or resistance to IBD using a genome-wide association study (GWAS).

Publications:

Manuscript in preparation.

Report to Grant Sponsor from Investigator:

This study was investigating the genetics of Inflammatory Bowel Disease (IBD) in German Shepherd Dogs (GSD) from the UK and the USA by using a Genome-Wide Association Study approach. The results of this study have revealed important factors that contribute to the disease and that could in the future help to find novel treatment options. In total we found 17 candidate genes. Twelve genes, two on chromosome 7 and ten on chromosome 11 (see Table) are involved in inflammatory or immune response pathways and also have been previously reported to be associated with human IBD.

Table: 17 genes identified using using Genome Wide Association, 12 of which (two on Ch7 and ten on Ch11) have been shown to be associated with human IBD.

Chromosome	Gene
Ch7	PTPRC, C1orf53
Ch11	IL3, Il4, IL5,CSF2, IL13, SLC22A4, SCL22A5,IRF1, ACSL6, PDLIM4

These exciting results have identified previously unknown candidate genes that are involved in the pathogenesis of IBD in GSD. This knowledge will form the basis of further studies to identify the mutations in these genes contributing to the disease and will help identifying novel clinical markers and treatment options for IBD in dogs.

RESEARCH PROGRESS REPORT SUMMARY

Grant 01609:
Use of Probiotic to Reduce the Symptoms of Inflammatory Bowel Disease

Principal Investigator:
Dr. Albert E. Jergens, DVM, PhD

Research Institution:
Iowa State University

Grant Amount:
$97,416.00

Start Date: 1/1/2012
End Date: 6/30/2017

Progress Report:
End-Year 5

Report Due: 12/31/2016
Report Received:
11/13/2016

Recommended for Approval: Approved
(Content of this report is not confidential. A grant sponsor's CHF Health Liaison may request the confidential scientific report submitted by the investigator by contacting the CHF office. The below Report to Grant Sponsors from Investigator can be used in communications with your club members.)

Original Project Description:

Idiopathic inflammatory bowel disease (IBD) is a common cause of chronic gastrointestinal disease in dogs. Accumulating evidence in human IBD and animal models suggests that imbalances in composition of the intestinal microbiota contribute to the pathogenesis of chronic intestinal inflammation. Recent studies have also shown that dogs with IBD have distinctly different duodenal microbial communities compared to healthy dogs. Current treatments for IBD include the administration of nonspecific anti-inflammatory drugs which may confer serious side effects and do not address the underlying basis for disease, namely, altered microbial composition. Use of probiotics (viable, non-pathogenic bacteria that exert health benefits beyond basic nutrition) offers an attractive, physiologic, and non-toxic alternative to shift the balance to protective species and treat IBD. The aim of the proposed study is to investigate the clinical, microbiologic, and anti-inflammatory effects of probiotic VSL#3 in the treatment of canine IBD. We hypothesis that VSL#3 used as an adjunct to standard therapy (i.e., elimination diet and prednisone) will induce a beneficial alteration of enteric bacteria leading to induction and maintenance of remission in dogs with IBD. A randomized, controlled clinical trial of 8 weeks duration will assess the efficacy of standard therapy + probiotic versus standard therapy alone. There is a need for additional data to be generated to provide proof of efficacy in probiotic therapy before these agents can be applied to widespread clinical use. These studies will also provide highly relevant insight into the anti-inflammatory effects of probiotics for treatment of human and canine IBD.

Grant Objectives:

To determine the clinical, microbiologic, and anti-inflammatory affects of probiotic VSL #3 in the treatment of canine IBD.

Publications:

- Otoni, R. Atilmann, M. Garcia-Sancho, et al. Serologic and fecal markers in prediction of acute disease course in canine chronic enteropathies. J Vet Intern Med 2012; 26:768-769.
- Slovak et al. Inter- and intra-observer assessment in the endoscopic assessment of canine inflammatory bowel disease. J Vet Intern Med 2013; 27:699.

Report to Grant Sponsor from Investigator:

Thanks to the CHF for funding this project once again. Data to date demonstrates that dogs with diabetes have predictable microbial imbalances which result in changes in their metabolic function contributing to poor clinical response to exogenous insulin administration. Of interest, the bacterial metabolites which are altered include both primary and secondary bile acids, similar to disturbances in bacterial metabolism seen in humans with diabetes.

Summarizing, we have addressed our primary hypothesis as to whether dogs with DM have dysbiosis of their fecal microbiota – yes they do. Secondarily, we provide new and innovative data on the role(s) of altered bile acid metabolism resulting from intestinal dysbiosis which favors the development of downstream insulin resistance.

What remains is to enroll additional dogs beyond the 3 to date for determination of the role of supplemental probiotics in modulating microbial imbalances and insulin sensitivity in dogs with spontaneous DM.

Foundation of America, Inc.

Westie

"LEADING THE WAY TO WESTIE HEALTH"

Legacy Alliance

Earn your wings.

Ways to Help Build a Better Life for Westies Today and Forever

- LIFE INSURANCE
- BEQUEST THROUGH YOUR WILL
- LIVING TRUST
- RETIREMENT PLAN
- GIFT IN TRUST
- RETENTION OF LIFE INTEREST
- GIFT ARTS, ANTIQUES, AND COLLECTIBLES

WFA's Wills, Gifts and Bequests package can help you make arrangements to ensure our Westie breed's health will be cared for into perpetuity. www.westiefoundation.org/legacy alliance

Westie Cartoon Caption Contest

Create the winning caption for this Westie cartoon. Please send your caption to bjpinter@msn.com before September 15, 2017. The winner will be announced in the next newsletter with his/her caption.

Create a Caption for this Cartoon

Copy of original watercolour by Ruth Sutcliffe, England

Winning Caption of Last Cartoon!

Elizabeth Kamish

"Enough foolin' around! Who has the Maypole instruction?"

WESTIE FOUNDATION OF AMERICA, INC
Leading the Way to Westie Health

OFFICERS

Bebe Pinter, President
428 Hedgecroft Drive
Seabrook, TX 77586
bjpinter@msn.com
(281) 326-3843

Teresa Richardson Barnes, VP – Communications
Independent Counsel
Patient Advocacy & Engagement
338 Greycliff Bluff Drive
St. Louis, MO 63129
TeresaRBarnes@hotmail.com

Marianne Jacobs, VP – Fundraising
4 Agave Court
Ladern Ranch, CA 92694
terriertoys@cox.net

Kay McGuire, DVM, VP – Health
21511 Forest Vista Drive
Humble, TX 77338
kmcscash@aol.com

Susie Stone, Secretary
1202 Fumi Circle
Kettle Falls, WA 99141
sfstone4@outlook.com

Gary Sackett, Treasurer
6440 Sky Pointe Drive, #140-213
Las Vegas, NV 89131
treasurer@westiefoundation.org

Jim McCain, Donor Manager
302 Hemlock Cove
Ball Ground, GA 30107
catercain@gmail.com

BOARD OF DIRECTORS

Thomas Barrie (Tom)
1 Janna Way
Lucas, TX 75002
opeterrpan@aol.com

Naomi Brown
2 Ridgecrest Avenue
Fairhaven, MA 02719
ashgateus@comcast.net

Valerie Fadok, DVM, PhD, Diplomate, ACVD
4402 Phil Street
Bellaire, TX 77401
fadokv@aol.com

Allison Platt
203 N. Slocumb Street
Goldsboro, NC 27530
allisonplatt79@gmail.com

Mary L. Sahady, CPA
140 Nichols Street
Falls River, MA 02720
mlsahady@gmail.com

Anne Sanders
33101 44th Avenue NW
Stanwood, WA 98292
Anne@WestiesNW.com

Pamela Whiting, DVM
1030 Elsbree Lane
Windsor, CA 95492
pgwhitingdvm@aol.com

Stevann Wilson, ESQ
4010 Fountainwood Circle
Georgetown, TX 78633
westie@stevann.com

ADVISORY COUNCIL

David Butterfield
Randy Cantrell
Kenneth Fodill
Kirsten Fox
Renee Glover, MD
Donna Harris
Donna Hegstrom
Michael Higginbotham, MD
Ann Marie Holowathy
Wayne Kompare
Lorraine Lennon
Harris Lichtenstein, PhD
Jenny Auger Maw
Tina McCain
Bob McCaskill, DVM
Mary Ann MInick
Maureen Murphy
Dean Nelson, CPA
Patricia Olson, DVM, PhD, DACT, DADAW
Michael J. Peltier, DVM
John L. Robertson VMC PhD
William (Sil) Sanders
Kim Smith
Sue Thomson