SOLUTIONS FOR DOGS WITH CUSHING'S DISEASE

How to Make Your Best Friend Feel Better

Marc Smith, DVM
Casey Damron, DVM
Becki Baumgartner

PET TAO

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How to Make Your Best Friend Feel Better

Spot lumbered into the exam room.

Spot walked somewhat bowlegged, carrying a distended belly and appearing as if he swallowed a basketball.

"So, what brings you to the veterinarian today?" inquired Dr. Smith.

"Well, Spot's not acting like himself."

"He is shaking, agitated, and eating everything in sight."

"He also pees and drinks all the time."

"And Spot's hair loss and skin infections are really an issue."

Spot's owners are very concerned.

Spot has been a family pet for 12 years, and he is still an important family member loved by all.

His death would rock the family.

After examining Spot, Dr. Smith concludes that he may suffer from Cushing's disease, a disorder in which the adrenal gland produces too much cortisol.

Cushing's is also called hyperadrenocorticism.

Anatomically, the adrenal glands are two triangular shaped glands located adjacent to the kidneys.

The outer layer, called the cortex, primarily produces three hormones:

- Cortisol- regulates metabolic activity and the immune system
- Aldosterone- blood pressure and water metabolism
- Sex hormones- estrogen and progesterone

The inner layer, called the medulla, primarily produces two hormones:

- Epinephrine
- Norepinephrine

Two forms of Cushing's Disease exist in dogs, typical Cushing's Disease and atypical Cushing's Disease.

Typical Cushing's Disease

The first form of Cushing's disease is called typical Cushing's.

In typical Cushing's adrenal cortex produces too much cortisol resulting in irregular metabolic and immune system activity.

Typical Cushing's is most often caused by hypersecretion of ACTH from the pituitary gland, a gland located at the base of the brain.

For this reason, Cushing's disease originating from the pituitary gland is termed pituitary-dependent Cushing's and as many as 80% of dogs diagnosed with Cushing's are labeled as pituitary-dependent.

The other 20% of the time, the adrenal glands, due to tumors are the cause of Cushing's disease.

Cushing's caused by renal tumors is called adrenal-dependent Cushing's.

Atypical Cushing's Disease

The second form of Cushing's disease, atypical Cushing's, was recently discovered.

Atypical Cushing's occurs when the adrenal cortex produces an excess of steroid hormones resulting in similar signs as typical Cushing's.

Both typical and atypical Cushing's affect mostly middle age to older dogs of all breeds.

Males and females are affected equally.

Dr. Smith says: "It seems to me that Spot may have Cushing's. Blood tests should confirm my suspicions. And, after we get the results and if the tests do indeed confirm a diagnosis of Cushing's, then we will discuss Cushing's treatment options, prognosis, and life expectancy."

Spot's owners, a young couple, are dejected and upset.

On the positive side, hope exists for dogs with Cushing's.

With a proper diagnosis and treatment, Spot can live a very productive, pain-free life well into his golden years.

From a diagnostic perspective, your veterinarian will perform a battery of tests including one or more of the following:

- Urine cortisol/ creatinine ratio: screening test
- Low dose dexamethasone test: screening test
- High dose dexamethasone test: differentiation test
- ACTH stimulation test: differentiation test
- Abdominal ultrasound: identification of adrenal tumor or adrenal enlargement

All of the above tests will help your veterinarian diagnose and categorize Cushing's.

Furthermore, your veterinarian will ascertain valuable information related to the type of Cushing's and the best treatment to initiate.

Whether the treatment involves diet, a natural treatment, pharmaceutical drugs, or even all of the above, Spot's future shines bright.

Natural Treatments for Dog Cushing's Disease

For any medical condition, we are attracted to the idea of natural treatments.

Natural treatments do no harm!

Supplements typically cost less!

And, home remedies generally require less effort!

However, the big question is: "Do natural treatments work?"

When deciding to treat your dog naturally for Cushing's disease, the best approach centers on treating the signs and symptoms of Cushing's, not the disease itself.

Like the typical approach of Western medicine, the symptoms are treated, not the root cause.

If you want to treat the root, however, you must use pharmaceutical drugs like Mitotane which affect the adrenal gland directly.

The following four natural treatments can and do benefit dogs with Cushing's:

- Milk Thistle
- Fish Oil
- Vinegar
- Eastern Herbals
    - Ophiopogon powder
    - Rehmannia 11
    - Rehmannia 14

Milk Thistle

Milk thistle is a European medicinal plant that contains silimarin (sylmarin, silibinin, sylibin), a flavonoid complex.

It's primary use in veterinary medicine is with liver disease because of its anti-oxidant activity.

Milk thistle also aids the flow of bile throughout the liver.

Since dogs with Cushing's disease frequently have elevated liver enzymes (ALP), then one can assume, rightfully so, that the liver is being impacted by Cushing's disease.

And, it is!

Increased circulating cortisol causes steroid hepatopathy which only exacerbates the clinical signs of Cushing's.

Recommended dosage is 10 mg per pound of body weight per day.

Milk thistle can be purchased at any local drug store.

Fish Oil

Fish oil has been praised for helping pretty much any kind of disease.

However, in regard to Cushing's, fish oil is beneficial because of its direct effects on the skin and increased circulating fats/lipids in the bloodstream (hyperlipidemia.)

Cushing's disease and its accompanying increased cortisol level decrease the ability of dogs to fight infections.

The decreased immune response is the very reason many Cushinoid dogs chronically battle hot spots and inflamed skin.

Fish oil is the perfect natural remedy to quiet inflamed skin.

For skin disease, dogs are usually given 60-100mg/kg twice daily.

For hyperlipidemia which is discovered on routine blood work, add fish oil at a dose of 220 mg/kg of body weight (BW) once daily.

Fish oil capsules may be obtained over-the-counter.

Make be sure you read the label carefully to ensure that your dog receives 220 mg/kg body weight of a combination of alpha-linolenic acid and the long chain omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

Eastern Herbals

Ophiopogon Formula is a Traditional Chinese Veterinary Medicine (TCVM) herbal blend that treats Cushing's Disease in dogs, cats, and horses.

The Western medical indications for Ophiopogon Formula are:

- Cushing's disease
- Equine Metabolic Syndrome (EMS)
- Insulin resistance
- Diabetes
- Hyperthyroidism

The Traditional Chinese Veterinary Medicine indications are:

- Dry skin with hot ears and feet,
- Excessive panting with spontaneous outbursts at night,
- Polydipsia (excessive thirst)
- Polyuria (excessive passage of urine)
- Yin deficiency
- Thready, fast pulse
- Red, dry tongue

Ophiopogon Formula is formulated with herbs that work synergistically to relieve symptoms of Cushing's Disease, while at the same time addressing the underlying causes of the symptoms.

The Chinese Principles of Treatment for Ophiopogon Formula are to nourish Yin, clear Heat, and promote body fluids.

Ophiopogon Formula is crafted from Mai Men Dong San.

The main ingredients in Ophiopogon Formula are:

- Bei Sha Shen (Glehnia) - nourishes Yin
- Dan Zhu Ye (Lophatherum) – clears heat
- Ge Gen (Pueraria) - promotes body fluids
- Huang Qin (Scutellaria) - clears heat
- Lu Gen (Phragmites) - clears heat and promote body fluids
- Mai Men Dong (Ophiopogon) - nourishes Yin
- Shan Zha (Crataegus) - resolves food stasis
- Shen Qu (Massa) - resolves food stasis
- Tian Hua Fen (Trichosanthes) - clears heat and promote body fluids
- Wu Mei (Mume) - astringently consolidates the Lung
- Yu Li Ren (Prunus) - moves blood
- Zhi Mu (Anemarrhena) - nourishes yin and clears heat

Ophiopogon powder is one of the most commonly prescribed Eastern herbals for Cushing's disease.

Other commonly used Eastern herbals are Liver Happy and Rehmannia 11.

Life Expectancy: How Long Will My Dog Live with Cushing's?

We all want our dogs to live forever.

Unfortunately, though, the life expectancy of dogs with Cushing's disease varies depending on a variety of factors.

First, When in the Disease Process is the Disease Diagnosed?

Diagnosing Cushing's with certainty is difficult.

If the disease is in its infancy, diagnosis is much more difficult, yet can be much more rewarding in regard to prognosis and quality of life.

Since the course of the disease is slowly progressive, the importance of being aware of the signs and symptoms of Cushing's is vitally important.

Signs of Cushing's in Dogs:

- Excessive drinking and urination
- Hair lose
- Agitation and panting
- Chronic skin infection
- Skin thickening
- Chronic urinary tract infections
- Distended abdomen
- Increased appetite
- Muscle loss and weakness
- Lethargy and weight gain

Owners usually report observing symptoms typical of Cushing's for 6 months to as long as 6 years before seeking veterinary attention.

Since changes made by Cushing's disease are quite gradual in onset and are often believed to be a result of simple aging, many dogs are not diagnosed until the disease is advanced.

When the signs become intolerable to the pet parent or after alterations in behavior are severe, veterinary opinions are sought.

If a Diagnosis of Cushing's is Confirmed, How Are You Going to Treat Your Dog?

Some owners prefer diligent treatment with pharmaceuticals, some owners prefer herbals and natural remedies, and some even prefer no treatment.

It all depends on your individual situation.

But, your choice of treatment can ultimately determine your dog's life expectancy.

So, in answering your main question on how long will my dog live with Cushing's, the response is dependent on two factors:

- When was the disease diagnosed?
- What is your chosen treatment?

Obviously, the earlier Cushing's is diagnosed the better.

The second factor related to treatment is much more confusing.

Choosing how to treat a dog with Cushing's is a huge decision that should not be taken lightly.

Treatment of Cushing's with pharmaceutical drugs requires a huge investment of both time and money.

Frequently, owners will spend in the thousands trying to help their best friend.

Also, veterinary visits may be weekly in the initial treatment stages.

Treatment can be frustrating and the side effects of pharmaceutical drugs can be disheartening.

Knowing the realities, many owners choose the herbal route.

Eastern herbal medicine benefits many dogs with Cushing's without the worry of side effects and expense.

In my practice, most clients choose herbal remedies because of the previously mentioned side effects and cost.

And, some owners prefer no treatment.

Blame cannot be placed on owners who prefer to leave their dogs untreated.

Sometimes, untreated dogs live longer than their treated counterparts.

Why?

Who knows?

Most likely, the reason lies in that individual dog's genetic resiliency.

Some experts say dogs will live 2 years and some reports cite 6 years.

In fact, trying to predict life expectancy in dogs with Cushing's is a true guess.

Everyone's got an opinion!

Dietary Recommendations for a Dog with Cushing's

Cushing's disease is one of the main endocrine diseases that cause hyperlipidemia (too much fat in the blood) in dogs.

Hyperlipidemia is easily diagnosed on routine blood work.

The ultimate dietary goal for dogs with Cushing's disease symptoms is to lower the amount of circulating fats in the blood.

The following recommended diet modifications will help lower the amount of fat in the blood of dogs with Cushing's disease.

A Fat-Restricted Diet

Initial treatment of primary hyperlipidemia involves a switch to a low-fat diet (<25 g/1000 kcal) with moderate protein content (generally greater than 18%, or 60 g protein/1000 kcal).

By way of contrast, diets low in protein may cause an increase in serum cholesterol concentration (Polzin et al., 1983; Hansen et al., 1992) and are therefore not recommended unless the presence of other conditions warrant their use.

Numerous nutritionally complete, low-fat canine diets are commercially available, but one must be careful to choose a diet that is low in fat based on a metabolizable energy (ME), and not strictly on the percent fat present in the diet.

Most diets with a fat content less than 8% will provide less than 25g fat/1000 kcal.

Some diets appear low in fat on a percentage basis (<8%), but actually provide substantially more than 25 g fat/1000 kcal when the amount of fiber in the diet and metabolizable energy are taken into account, and thus are not low-fat diets.

After feeding a low-fat diet for 6 to 8 weeks, the presence of hyperlipidemia should be re-evaluated.

Low-fat diets alone may not cause resolution of hyperlipidemia, especially when there is a high concentration of endogenous triglyceride (VLDL-TG) (Bauer, 1995).

Fish Oil

Fish oil supplementation can help lower circulating triglycerides and fats.

Fermentable Fiber Intake

Adding a blend of fructooligosaccharides and beet pulp to the diet may also help, since this blend can decrease serum triglyceride and cholesterol concentrations in the dog (Diez et al., 1997).

Antioxidant Treatment

Antioxidant therapy consisted of a combination of α-tocopherol, β-carotene, vitamin C, selenium, and methionine may be beneficial in lowering circulating blood fats.

What Are My Pharmaceutical Options for Cushing's Disease?

Considering the potential side effects, deciding whether or not to treat your dog with a pharmaceutical drug is stressful.

Pharmaceutical Choices for Cushing's Treatment

Pharmaceutical options include:

- Mitotane
- Trilostane
- Ketoconazole
- L-deprenyl

The current treatment of choice for pituitary dependent Cushing's is chemotherapy with op-DDD (mitotane, Lysodren®).

Mitotane

Mitotane is derived from the insecticide DDT.

The drug causes severe and progressive necrosis or death of certain parts of the adrenal gland.

Basically, the drug eats away at the adrenal gland.

Normal dogs for some unknown reason are clinically quite resistant to the effects of the drug.

Prior to initiation of mitotane, the clinical signs should be consistent with a diagnosis of hyperadrenocorticism and the diagnosis should be confirmed.

Dogs should be systemically normal with a good to excellent appetite.

Mitotane should never be administered to animals that are not eating well.

Since Mitotane selectively destroys the adrenal gland, the risk of too much destruction should be considered and is always a possibility.

Prednisone is not usually administered concurrently, but a small supply of prednisone should be made available to the owner in case of an emergency.

When too much adrenal destruction occurs, prednisone may be necessary to ameliorate the clinical manifestations.

When adrenal destruction occurs, the event is called iatrogenic addisonians.

Mitotane should be administered for up to 10 days, until water consumption decreases to <100 mL/kg/day, or until a decreased appetite, depression, diarrhea, or vomiting are observed.

At this point, the dog should be reevaluated and an ACTH stimulation test performed.

Prednisone treatment (0.1 to 0.2 mg/kg) should be initiated in patients that are showing clinical signs of too little cortisol, until the results of the ACTH stimulation test are known.

In patients who are not polydipsic, patients in which water consumption cannot be monitored, and patients in which polydipsia is due to another underlying disease (eg, diabetes mellitus), mitotane should be administered for a maximum of 5 - 7 days prior to testing.

The goal of treatment is to have both the pre- and post-cortisol measurement in the normal range.

Maintenance therapy (50 mg/kg q 7 - 10 days) is started once the ACTH stimulation test is adequately suppressed and prednisone therapy (if necessary) has been discontinued.

Failure to use maintenance therapy will result in re-growth of the adrenal cortex and recurrence of clinical signs.

Efficacy of maintenance therapy is monitored by an ACTH stimulation test in 1 month and then every 3 to 4 months thereafter.

Reasons for treatment failure include the following:

- Incorrect diagnosis
- Presence of an adrenal tumor although some adrenal tumors will respond
- Iatrogenic Cushing's due to prednisone administration

- Requirement for a higher dose or duration of treatment

Side effects of mitotane can be severe and include:

- Gastric irritation
- Addisonian crisis (drug eats away too much adrenal tissue)
- Occasionally neurologic signs
- Inability to distinguish drug intolerance versus Addisonian crisis

Mean survival time of 200 dogs treated with mitotane was 2.2 years (range 10 days to 8.2 years).

The advantage of Mitotane is, that in the majority of cases, mitotane produces excellent control of clinical signs associated with Cushing's.

Mitostane has disadvantages as well. Destroying the tissue of the adrenal gland is not definitive therapy for pituitary dependent Cushing's.

Trilostane

In dogs that fail to respond to mitotane or dogs that do not tolerate the drug, the next choice of therapy is trilostane.

Trilostane is a synthetic hormonally inactive steroid analogue, which is a competitive inhibitor of the 3 beta-hydroxysteroid dehydrogenase system.

The drug blocks production of a number of adrenal steroids including cortisol and aldosterone.

Trilostane is rapidly absorbed orally although suppression of plasma cortisol concentrations is short lived.

Trilostane is well tolerated by dogs and is reportedly effective in controlling polyuria and polydipsia in 70% of cases, and dermatologic changes in approximately 60% of dogs.

Trilostane is well tolerated in most dogs.

Adverse effects that have been reported include diarrhea, vomiting, and lethargy in 63% of dogs, which is usually mild and self-limiting.

Advantages of Trilostane

Experience from Europe suggests trilostane is an effective and safe treatment for canine pituitary dependent Cushing's.

Trilostane reportedly has a lower incidence of side effects compared with mitotane.

Disadvantages of Trilostane

The major disadvantage of Trilostane therapy is that it is not definitive therapy for PDH.

Side Effects of Trilostane

Commonly reported adverse reactions include:

- Loss of appetite
- Vomiting
- Lethargy
- Diarrhea
- Weakness

Less common but potentially fatal reactions include:

- Hemorrhagic diarrhea
- Collapse
- Addisonian crisis
- Adrenal death

Ketoconazole

Ketoconazole is an orally active antifungal agent commonly used in veterinary medicine to treat fungal infections.

Ketoconazole does not result in good long-term control of Cushing's disease.

A dose of 30 mg/kg every 12 hours results in a rapid reduction of serum cortisol concentrations in most animals.

Signs of toxicity are uncommon but include anorexia and vomiting.

The disadvantages of Ketoconazole include:

- Need for daily medication
- Cost
- Poor long-term control in many cases

Ketoconazole is most useful for the palliative therapy of metastatic adrenal tumors and for pre-surgical stabilization of operable adrenal tumors.

L-deprenyl

L-deprenyl is a selective monoamine oxidase type B inhibitor, which increases CNS dopamine concentrations.

Treatment with L-deprenyl has recently been reported to be effective in less than 20% of dogs with PDH.

Surgical Treatment of Adrenocortical Tumors

In the unfortunate circumstance of an adrenal tumor, treatment involves either surgical resection of the tumor or medical therapy with mitotane, trilostane, or ketoconazole.

Removal of the adrenal gland should be reserved for patients without extensive tumor invasion or metastasis.

Abdominal ultrasound can assist in planning the surgery.

After surgically removing the diseased gland, the normal adrenal gland tissue will be atrophic and glucocorticoid, and sometimes mineralocorticoid supplementation is necessary in the perioperative and postoperative period.

The prognosis for adrenocortical tumors without metastatic disease that survive the initial perioperative period is good.

In one study, 80% of dogs survived the perioperative period.

Some dogs with inoperable tumors or metastatic disease may respond to medical treatment with high doses of op-DDD (mitotane).

Mitotane is often successful in controlling clinical signs and in some cases may also result in tumor shrinkage.

Cushing's Prognosis: The Likely Course of a Disease or Ailment

Veterinarians evaluate and discern different pet health situations daily.

We do the best we can to inform our clients and give credible information.

Sometimes, though, we have to give advice and make decisions with a limited amount of information.

Whether we are advising a client on the symptoms of Cushing's disease or explaining how their dog will respond with Cushing's left untreated, we must draw upon our clinical experience.

The same is true with Cushing's disease and predicting prognosis and life expectancy.

The reality is that each and every one of you cannot or will not run every test for canine Cushing's disease.

It would be great, but it's not always practical or necessary.

Consequently, determining a prognosis is not exact.

Cushing's Disease Prognosis Guidelines

Prognosis for dogs with pituitary dependent Cushing's treated medically is good with a reported median survival rate of 2 years.

A more recent study found a survival rate of 900 days for dogs treated with twice daily trilostane, versus 720 days for dogs treated with mitotane.

Uncontrolled urination and excessive drinking are the most important factors in considering euthanasia.

Dogs with neurologic signs from a pituitary tumor have a poorer prognosis, but may do well with radiation therapy and medical treatment.

Prognosis for dogs with adrenal dependent Cushing's due to a tumor is good to excellent with complete surgical excision of adrenal tumors without metastasis.

Medical therapy for adrenal dependent Cushing's has a fair to good prognosis with a median survival of 14–15 months.

As you can see, predicting prognosis is tough and requires the veterinarian to draw on their wealth of knowledge and experience to give you good, sound advice.

In my practice, I have seen and been involved with dogs that read the Cushing's guidelines and laughed.

The dogs lived much longer than I ever expected, and defied many of the odds I read about in textbooks.

Consequently, I always preface my Cushing's prognosis with "Well, the textbooks say...But, dogs don't read textbooks!"

Hair Loss: Possibly The First Sign of Dog Cushing's Disease

Hair loss, or alopecia, is often the first sign of an endocrine disease like Cushing's.

Other skin related signs of endocrine disease in your dog could be the following:

- Thinning of the skin
- Skin infection or hot spots
- Comedones (blackheads)
- Hyperpigmentation
- Calcinosis cutis (calcium deposition in the skin)

Hair loss in dogs with Cushing's disease affects the trunk, sparing the head and distal extremities.

Furthermore, Cushing's is often associated with other systemic signs, such as polyuria, polydipsia, and polyphagia, and is often accompanied by elevated ALP levels.

Frequently, however, hair loss is the first clinical sign noted.

A middle-aged dog with truncal hair loss sparing the head and distal extremities should always be evaluated for possible endocrine disease.

However, if the dog is negative on the Cushing's test, other diseases should be considered, including Alopecia X and hypothyroidism.

Alopecia X is a clinical disease that affects primarily Nordic breeds and Toy or Miniature Poodles.

Another name for Alopecia X is Adrenal Hyperplasia-Like Syndrome, thus the relationship to Cushing's.

Hair loss occurs as early as 1 year of age or as late as 10 years of age.

The primary clinical presentation is the symmetrical gradual loss of hair over the trunk and caudal thighs, sparing the head and front limbs.

Frequently, the skin may become hyperpigmented.

The clinical differentiating factor between Alopecia X and Cushing's is that the only sign of Alopecia X is hair loss. No other signs are noted with Alopecia X.

Treatment of Alopecia X includes spaying or neutering, melatonin therapy, and in extreme cases Trilostane.

Another endocrine disease, called hypothyroidism, is the most common endocrine disease causing hair loss in dogs.

Hypothyroid dogs exhibit the following signs:

- Weight gain
- Sluggishness
- Scaly skin
- Hair loss
- Muscle loss
- Cold intolerance
- Slow regrowth of clipped hair
- Rat tail

Diagnosing thyroid disease in dogs is fairly straightforward.

Total T4 (TT4) concentration is a sensitive but nonspecific screening test and values are low in most hypothyroid patients.

Why Is My Dog Shaking?

Being bummed out over your dog's diagnosis of Cushing's disease is normal and expected.

You consider natural treatments, diet, and pharmaceutical drugs.

It's even crossed your mind to leave your best friend untreated.

In other words, let nature takes its course!

But, you know that leaving your best friend to fend for herself is preposterous.

And, and even though your veterinarian has discussed all the treatment options, life expectancy, and, most importantly, prognosis, you still don't know what to do.

You are stuck!

However, you trust your veterinarian and decide to follow her advice no matter what the cost.

So, you start the medicine Trilostane.

The first few days are great.

Your dog is normal again.

The peeing and drinking are gone.

Everything is great, you think.

Yay! Buffy is normal again!

You are happy!

But on the tenth day of treatment, you notice Buffy is not acting like her happy self.

You notice she is not eating like she did the day before.

But, you blew that off thinking that maybe she was just adjusting to the new medicine.

Now, though, she is shaking, trembling and so weak that she can't get up.

"Gosh! Why did I do this to Buffy?" You think!

"Maybe I should have used the herbal medicine the holistic vet suggested?"

You begin to question yourself!

Your mind races with confusion.

You have a queasy feeling in your stomach that something is terribly wrong.

Well, your presumptions are probably correct.

Most likely, your dog, who you were treating with the best of intentions, is now battling iatrogenic Addison's disease, also known as low cortisol syndrome.

Iatrogenic Addison's disease the most common side effects of Cushing's pharmaceutical drugs.

Damn! Now you have another disease to deal with.

"I didn't sign up for this!" You think!

Unfortunately, while your dog is being treated with Trilostane or Mitotane for Cushing's, there is always a risk that the medicine could essentially turn off the adrenal gland.

Turning off the adrenal gland results in too little cortisol production.

Too little cortisol production leads to a myriad of clinical signs including weakness, vomiting, lethargy, shaking, and even total collapse.

The good news is your dog can recover, and often in a short period of time.

You must stop the medicine, possibly administer a steroid like prednisone, and keep your fingers crossed that a full recovery is imminent and, fortunately, it usually is.

First, the medicine must be stopped to allow time for your dog to recover.

Then, treatment is reinitiated at a lower dose and monitored.

Sounds pretty simple and generally speaking, it is.

However, the emotional turmoil and expense when side effects occur is surely disheartening and draining to say the least.

Buffy can and will recover.

Final Thoughts on Cushing's:

- Treating a dog for Cushing's is demanding on the pet owner.
- No one can tell you the exact prognosis.
- There are definite bumps in the road with traditional treatments.
- The most common reason owners pursue euthanasia is inappropriate urination.
- Many dogs with Cushing's respond to treatment.

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Trilostane and Mitotane
Thomas Schermerhorn, VMD, Diplomate ACVIM

Hyperadrenocorticism in Dogs
Alex Gallagher, DVM, MS, DACVIM (Small Animal), University of Florida