

# Veterinary Centre

## Cushing's Disease (Hyperadrenocorticism)

INFO  
Sheet

### What is Hyperadrenocorticism?

Hyperadrenocorticism, also called Cushing's disease, is a condition caused by long-term exposure to high concentration of cortisol, a hormone that is necessary for life and is normally secreted in response to stress. The chronic excess of cortisol leads to clinical signs ("symptoms"), which are similar to those observed after administration of steroids such as prednisone. These clinical signs might progress slowly, and in some dogs the disease may remain unnoticed for some time. The most common signs are drinking and urinating excessively, increased appetite, weakness and fatigue, excessive panting even at rest, dull and dry hair coat, hair loss or a distended abdomen with potbellied appearance.

There are two main causes of this disease in dogs. The most common cause (85% of cases) is a benign tumour in the pituitary gland located in the base of the brain. In this presentation, also known as pituitary-dependent hyperadrenocorticism (PDH), the pituitary gland produces high amounts of a hormone (ACTH or adrenocorticotrophic hormone) that stimulates cortisol production in both adrenal glands located in the abdomen.

In approximately 15% of dogs with the disease, a tumour in one of the adrenal glands itself produces the excess of cortisol, while the other adrenal gland usually stops functioning. In these cases, the disease is called adrenal-dependent hyperadrenocorticism (ADH).

In a very small number of dogs with PDH, a pituitary macro tumour (a still benign but larger tumour) might be causing the disease, and, in these cases, neurological signs can occur (reduced appetite, behavioural changes, reduced consciousness, etc.).

### Diagnosis

Diagnosis of hyperadrenocorticism requires routine blood and urine tests and hormonal tests to check for increased cortisol levels. Individual hormonal tests are not always 100% in confirming the diagnosis and in some situations more than one test must be run. Diagnostic imaging (ultrasound) may also be needed/recommended to confirm the disease or to differentiate between pituitary and adrenal dependent hyperadrenocorticism.

### Treatment

Left untreated, Cushing's disease will progress. The clinical signs tend to worsen to the point of affecting the quality of life of the pet (e.g. skin disease and urinary tract infections) or cause concerns for the owner (e.g. wetting around the house due to increased water consumption). They are also predisposed to developing other diseases such as pancreatitis and diabetes. Although the treatment

for Cushing's Disease is not without its own problems, the treatment is much better than the disease, and treatment will prolong the patient's life and improve the quality of life as well.

Cost is very dependent on patient size and final dose. We will be happy to go through expected cost for your pet.

The aim of treatment for hyperadrenocorticism is to reduce your pet's excessive levels of cortisol and thus the clinical signs.

In dogs with PDH, the treatment of choice is the administration of the medication trilostane (Vetoryl™), which reduces the synthesis of cortisol in the adrenal glands. In dogs with PDH, treatment with trilostane leads to an increase in quality of life and survival. Currently in New Zealand, there is no option for surgical removal of a pituitary based tumours.

The administration of trilostane will be needed for life, since its effect is reversible and it will disappear some hours after its administration. You should notice the effect of trilostane during the first days of treatment; your pet will drink less water and urinate less, the appetite will be reduced, and probably she/he will feel better. Other issues such as hair loss, skin problems, weight gain and pendulous abdomen, as well as some of the common blood test findings (increased liver enzymes) may take 3 to 6 months to resolve. The hair coat may worsen transiently before it improves.

Trilostane is not toxic per se; however, it may produce adverse effects, due to a rapid or severe reduction of cortisol or other adrenal hormone concentrations. These adverse effects can be subtle: reduced appetite and thirst, and soft faeces; or moderate to severe, including reduced or absent appetite, nausea or vomiting, diarrhoea, and weakness. If you observe any of these signs, even if they are subtle, YOU SHOULD STOP GIVING THE TRILOSTANE and contact us as soon as possible. These clinical signs will usually disappear after 1 to 2 days of medication withdrawal, since cortisol secretion is restored. In a small number of patients, clinical signs of hypocortisolism might persist and some dogs might need hospitalisation. In a very rare situation, some dogs treated with trilostane develop permanent hypocortisolism and they may require life-long oral steroid supplementation.



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**In dogs with adrenal tumour dependent Cushing's disease,** trilostane is also effective but the response to treatment and outcomes can be more variable. Ideally, treatment for adrenal tumours would be surgical excision. This is a complex surgery that would need to be performed at a veterinary referral centre. We are happy to discuss this option with you if appropriate for your pet.

Concurrent diseases, especially skin and urinary tract infections, and hypertension (high blood pressure) are not uncommon and may need to be treated separately from the Cushing's disease. These may resolve once the Cushing's disease is controlled.

## Monitoring after the Initial Dose

While there is a dose range for animals on trilostane, how each animal responds is variable. As such, we generally start on a low

dose and increase the dose in increments. Most patients, will require dose adjustments (>70% of patients) after the initial dose of trilostane. Check-ups and follow up bloods will be performed over the first few months to monitor cortisol levels. However, a large part of assessing response will be your observations as an owner. Monitoring thirst and appetite will be key.

Check-ups may be regular over the first few months. At the clinic, a medical history and physical exam will be performed as well as blood analyses and blood pressure measurement, in order to evaluate whether the dose is adequate or should be modified. Once stabilised check-ups are likely to be required

about every 3 months afterwards. In well-regulated dogs, after the first year of the treatment, check-ups can be done every 6 months.

We look forward to being part of the team involved in the care of your pet.

Week	Date	Monitoring Notes	Procedure
<b>Day 1</b> (Enter start date of treatment)			An ACTH stimulation test and other blood tests will have established that your dog suffers from Cushing's syndrome. Vetoryl® has been prescribed. Remember to read the package insert before starting treatment and discuss any concerns you may have with your veterinary surgeon.  Start Vetoryl® treatment in the morning with food as instructed by your Blue Cross Vet. Monitor your dog's water intake and appetite. If your dog shows any signs of being unwell, stop treatment and contact your Blue Cross Vet immediately.
<b>Day 10</b>			Your Blue Cross Vet will want to assess progress by performing an ACTH stimulation test. It is important to check that cortisol levels are not too low nor too high, and to ensure that there are no other underlying conditions affecting the health of your dog.  Adjustments to your dog's Vetoryl® prescription may need to be made.
<b>Week 4</b>			
<b>Week 12</b>			
<b>Week 24</b>			
<b>Week 36</b>			
<b>Week 48</b>			

