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Addison's Disease

What is Addison's Disease?

Addison's Disease is the common name for hypoadrenocorticism. It is a condition characterized by the reduced or absent production of certain important hormones from the adrenal glands. The adrenal glands are paired structures located near the kidneys and they are responsible for production of several important hormones including cortisol and aldosterone. Cortisol acts in many ways to regulate the body's metabolism, while aldosterone helps to regulate water, sodium and potassium balance. Both of these hormones are vital to the way the body responds to stress.

What Causes Addison's Disease?

Addison's Disease is caused by damage to the adrenal glands resulting in a reduced ability to produce these important hormones. Most commonly this damage results from hereditary immune mediated destruction of the adrenal glands. Less commonly, it may result from infection, tumor formation or overuse of medications that reduce the function of the adrenal glands. A secondary form of Addison's Disease can also result from damage to the pituitary gland in the brain.

There are two types of Addison's Disease. The more common type involves loss of production of both cortisol and aldosterone, while the less common type, called Atypical Addison's Disease involves loss of production of cortisol but aldosterone remains normal.

Certain breeds may be at increased risk of developing Addison's Disease, including the Portuguese water dog, bearded collie, standard poodle, Nova Scotia duck tolling retriever, Leonberger, and Labrador retriever. Female dogs are twice as likely to be affected as male dogs.

What are the Clinical Signs of Addison's Disease?

Clinical signs of Addison's Disease may be acute and life-threatening or chronic and non-specific. Clinical signs of Addison's Disease may mimic those of many other common conditions. Signs may wax and wane and may often be worse during times of stress or excitement. Clinical signs may include:

- Reduced appetite
- Vomiting
- Diarrhea
- Lethargy/weakness
- Weight loss
- Depression
- Increased drinking/urinating
- Shaking

How is Addison's Disease Diagnosed?

Addison's Disease is initially suspected based on characteristic clinical signs and physical exam findings. A general blood panel will often show characteristic changes including decreased sodium and increased potassium levels. A resting cortisol blood level may be measured as an initial screening test. A definitive diagnosis of Addison's Disease is made using a test called an ACTH stimulation test. When this test is performed, an injection of ACTH hormone is given which, in a normal dog, will stimulate the adrenal glands to produce cortisol. Cortisol levels are measured pre-injection and post-injection and if cortisol levels do not increase as expected, Addison's Disease is diagnosed. Since Addison's Disease also closely resembles other conditions, other testing such as radiographs (x-rays) and ultrasound may also be performed.

How is Addison's Disease Treated?

Addison's disease is treated by replacing the hormones which are lacking from the adrenal glands. Cortisol is replaced using a daily oral steroid called prednisone. Aldosterone is most commonly replaced using Percorten®-V (desoxycorticosterone pivalate – DOCP). This is a synthetic form of aldosterone and is given as an injection approximately every 25-30 days depending on the patient. In certain cases, aldosterone may instead be replaced with a daily oral medication called Florinef. Prednisone supplementation may or may not be required with Florinef.

In the case of Atypical Addison's disease, only prednisone treatment is required, although Atypical Addison's patients may eventually progress to the typical form.

Treatment is life-long and occasional blood work monitoring is required. Blood work will need to be rechecked 2 weeks after beginning treatment, monthly for 3 months, and then approximately every 6-12 months once electrolytes are stable and medication dosing and frequency have been determined. During times of stress such as traveling or boarding, prednisone dosing may have to be increased to accommodate the increased stress.

What is the Prognosis with Addison's Disease?

With proper treatment and monitoring, the prognosis is good to excellent. Diet and activity level can typically remain unchanged and patients can resume normal lives.