

HYPOADRENOCORTICISM

"ADDISON'S DISEASE"

Addison's Disease was named after Thomas Addison, the physician who first described the disease in people in the late 19th century. The technical name of Addison's Disease, hypoadrenocorticism, is easier to understand if it is broken down into its component parts. The adrenal glands are located on each side of the body just in front of each kidney. The outer layer of these small glands, called the cortex, produces hormones called corticosteroids - the body's own cortisone-like chemicals. The corticosteroid that we measure with blood testing is called cortisol.

The inner layer of the adrenal glands, called the medulla, produces a set of hormones called mineralocorticoids, which regulate sodium and potassium levels in the body.

In hypoadrenocorticism, the adrenal glands do not produce sufficient amounts of adrenal hormones. "Hypo" means not enough or low, "adreno" refers to the adrenal glands, and "corti" to the adrenal cortex specifically. The last syllable, "cism" means the state of. So, the word hypoadrenocorticism means "The state of not enough adrenal cortex."

The lack of hormones in the body that the adrenal glands should produce leads to the symptoms of the disease - excessive urination and water drinking, depression or lethargy, vomiting or diarrhea, muscle weakness or tremors, irregular heart rhythm, and eventually shock-like collapse which can quickly be fatal. Most of the symptoms are caused by low sodium levels in the body, due to lack of the mineralocorticoid hormones which regulate the sodium level. Dogs with hypoadrenocorticism also have high levels of potassium. The diagnosis may be made through blood testing of electrolyte levels (including sodium and potassium), or by characteristic changes on an EKG (electrocardiogram).

The symptoms may not all occur at once. They also start very gradually in some cases, or can wax and wane. Many owners do not realize their pet is sick until they reach the shock or collapse stage, called an Addisonian crisis. In the early stages Addison's Disease resembles many other disease problems. The diagnosis may be suggested by changes in blood chemistry tests, which also help diagnose other diseases which can cause similar symptoms. If symptoms are not yet severe, and electrolyte levels are not severely out of balance, specific hormone assays are needed for diagnosis.

There are several specific test protocols that are used to diagnose Addison's Disease. They all involve testing cortisol levels before and after the administration of other hormones, to see if the adrenal and pituitary glands respond appropriately. An ultrasound scan of the abdomen can also be done to look for adrenal gland atrophy (shrinkage).

There are several causes of the hypoadrenocorticism. The first is a tumor or damage to the pituitary gland. The pituitary gland produces hormones that tell the adrenal gland what to do. If the pituitary gland doesn't send enough ACTH hormone to properly stimulate the adrenal glands, they in turn won't produce enough adrenal hormones.

Infection, cancer or drugs can damage the adrenal glands. Sometimes the dog's own immune system destroys the adrenal tissue, for reasons we don't understand. Most of the time the problem does lie with the adrenal glands but we never know for sure what caused the disease.

The treatment for Addison's disease is usually medical, vs. surgical, no matter what the cause of the disease. Treatment involves replacing the hormones the adrenal glands are not producing with oral tablet medications, or occasionally with an injectable form of hormones.

Sometimes it is possible to just give glucocorticoid (steroid) tablets, which have some mineralocorticoid effects. More often, both types of adrenal hormones are needed, so there will be two types of pills administered for the rest of the dog's life.

The hard part is getting the right dosage of the medication. How much the dog needs depends on how much adrenal tissue remains and what the dog is doing. Stress changes the amount of hormones needed, so extra medication may be needed for any stress, whether physical or mental. In other words, if your dog gets sick, over exercises, gets scared of a thunderstorm, or feels stressed by a change in your household, he or she may need extra medication. Otherwise an Addisonian crisis could result.

If your pet is already in an Addisonian crisis when the disease is diagnosed, the first step in treatment is to give saline solution IV to get the sodium level back into normal range. Steroid hormones are also given IV or by mouth. Several days of intensive care may be needed to get through the crisis stage and to begin oral medication. Once your dog is stable he or she will go home on medication. After that, repeat blood testing of sodium and potassium levels, and additional ACTH stimulation tests, are needed to establish the proper doses of medication and to adjust dosages as the dog ages, or as things change as far as stress levels and overall health.

Addison's Disease can be difficult and expensive to treat. The mineralocorticoid hormones are expensive, especially for big dogs. The initial costs for diagnosis and treatment usually are several hundred dollars, and since care is lifelong the costs continue after that. We will do our best to give you an estimate of the cost of treatment for your dog, but it may not be very precise.

Although this is a treatable disease it is also a very serious one. Your pet may not have a normal lifespan. Because of sensitivity to stress, anesthetic risks are higher if your pet requires dental work or surgery, and even minor diseases can cause severe illness. We want you to be well informed about the treatment in your particular dog's case, so the doctor will go over the treatment needs with you in detail.

Please let us know if you have further questions about your pet's care for Addison's Disease.

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