

Addison's Disease in Dogs



By Anne Dalby, DVM, DACVIM
Animal Emergency & Specialty
Center - Parker, Colorado

Hypoadrenocorticism, also known as Addison's disease, is an example of one of the more serious causes of vomiting and diarrhea in dogs. Both vomiting and diarrhea are very common problems in our canine friends and a majority of the time the problem is quickly resolved without significant medical attention being needed. Occasionally this can be an indication of a more significant problem.

Addison's disease is commonly called the great pretender since the clinical signs are relatively vague. The disease most commonly affects younger to middle-aged female dogs, but it is also seen in males. There are some breeds that are predisposed to Addison's disease. Great Danes, Standard Poodles, Pointers and West Highland White Terriers are over represented, but the disease can occur in any breed and at any age.

Most dogs present with vague signs such as vomiting, diarrhea, excessive drinking and excessive urination. The clinical signs sometimes occur after a stressful event. With some intravenous fluid support the dogs may seemingly recover only to have the signs occur again at a later date. If untreated, dogs with Addison's disease will eventually become severely ill and can die. Often they present to a

veterinarian with lethargy, diarrhea, vomiting and dehydration. Although many dogs do have some history of previous illness, this is not always the case.

Addison's disease is an endocrine disease that occurs as a result of adrenal glands that are no longer producing hormones the way they should. The adrenal glands sit next to the kidneys and their primary purpose is to produce certain hormones. When a patient has typical Addison's disease, the outer layers of the adrenal glands are no longer producing cortisol and mineralocorticoid. Cortisol helps the body deal with stress. Without cortisol the body becomes ill, usually manifesting as intestinal illness and an inability to completely concentrate the urine. The mineralocorticoid is responsible for the balance of electrolytes in the body. When mineralocorticoid is not present, life-threatening electrolyte disturbances can occur.

Laboratory work is often recommended in dogs with recurrent or severe intestinal signs. If the dog is a typical Addisonian they'll have some very characteristic laboratory abnormalities. The primary abnormalities seen include a normal lymphocyte count, low sodium, low chloride, high potassium, low albumin, low cholesterol, low blood glucose, elevated blood urea nitrogen (BUN) and elevated creatinine. Urine concentration will be variable.

Dogs who are ill often will have a low lymphocyte count. This is also known as a stress leukogram. The absence of a stress leukogram can be an indication of low levels of the stress hormone cortisol. Low glucose, albumin and cholesterol levels are also a result of decreased cortisol. The low sodium and chloride with the elevated potassium can indicate low levels of mineralocorticoid. Dogs with Addison's disease often have elevation in their kidney values. This is as a result of dehydration. Typically dehydration can be differentiated from kidney failure by looking at the urine concentration. Dehydrated patients will have a very elevated urine specific gravity (concentrated urine) while renal failure

patients will have a lower urine specific gravity. Unfortunately this distinction is not as black and white with Addison's disease because the lack of cortisol will often prevent urine concentration.

For this reason it can be difficult to differentiate a dog in acute kidney failure from a dog having an Addisonian crisis. Luckily, both are initially treated the same way and a test called an ACTH stimulation can be sent out to confirm or eliminate Addison's as the cause. Test results typically take one to two business days. In the meantime, the dogs are stabilized. The main goal of stabilization is to rehydrate and correct electrolytes. If a dog is in an Addisonian crisis, the potassium can be so elevated that it can stop the heart. This is the number one reason for fatalities associated with Addison's disease. High potassium can often be temporarily corrected with aggressive intravenous fluid support and occasionally supplementation with dextrose and insulin. As the dog becomes better hydrated the electrolytes will normalize and the kidney values will improve.

There is a second type of Addison's that results in decreased cortisol levels but normal mineralocorticoid levels. Dogs with atypical Addison's have similar intestinal symptoms and lab work findings, but without the life-threatening electrolyte disturbances. They can still become life-threateningly ill if not diagnosed and treated. This diagnosis is also made by using the ACTH stimulation test. The initial treatment is IV fluids and antibiotics if blood infection is present. Infections occur when bacteria migrate from the intestines to the bloodstream as a result of decreased intestinal health due to lack of cortisol.

Most dogs feel significantly better after IV fluids. Often within 24 hours the dogs are looking and feeling much better. Occasionally we will see a dog that was severely ill at presentation. These dogs will often take longer to recover. In extreme cases dogs may require blood transfusion due to intestinal blood loss.



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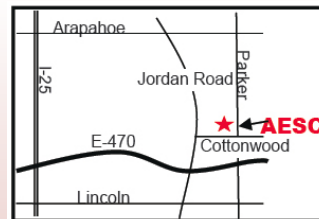


Dr. Anne Dalby

17701 Cottonwood Drive
Parker, Colorado 80134
www.AESCparker.com

720.842.5050

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If a dog has Addison's disease the ACTH stimulation test will show cortisol levels of less than 2. Once we have a diagnosis, additional therapy is implicated. The goal of therapy for the typical Addisonian is to provide mineralocorticoid and glucocorticoid (cortisol) replacement. Two medications are available for the treatment of typical Addison's disease. Percorten is an injectable medication administered approximately once every 25 to 27 days. Dogs taking Percorten also need small doses of steroid daily. The other medication is a daily oral medication called florinef. Both treatment forms are very effective. Dogs who are treated appropriately will be able to enjoy a normal, happy life.

Follow-up appointments are scheduled at two-week intervals. During these visits, electrolytes are checked to be sure the dosage is appropriate. If Percorten is being used, the re-checks are also utilized to make sure that the duration between injections is appropriate. Once we have good control of the disease, the rechecks will be done every 6-12 months. Typically, clients can be taught how to give the monthly injections at home. The cost of therapy can be relatively high. Generally, larger dogs are more expensive to treat than smaller dogs. Percorten tends to be more cost effective for larger dogs.

Dogs with atypical Addison's disease are treated with low-dose steroid alone.

Percorten or florinef are not needed. We do recommend monitoring these dogs periodically to make sure that they are not developing typical Addison's.

Although Addison's is a serious life-threatening condition, prompt recognition and treatment in addition to diligent therapy will allow for an excellent life for our canine friends.

Dr. Anne Dalby is a Board-Certified Specialist in Small Animal Internal Medicine and sees patients by appointment at Animal Emergency & Specialty Center in Parker. For more information or to schedule an appointment, please call 720-842-5050 or visit www.AESCparker.com.