Hypoadrenocorticism (Addison’s Disease)

Hypoadrenocorticism is a disease that can appear very differently in the clinic than the way it tends to appear on board exams. In the real world, this disease can be “The Great Imitator” and should be on the differential list for a multitude of common clinical signs. Dogs can present anywhere along the spectrum, from vague and mild clinical signs and bloodwork abnormalities to a life-threatening emergency, with severe GI signs and cardiac abnormalities. Fortunately, on board exams, you should expect to be asked about cases that display most of the “classic” signs associated with Addison’s disease; these are discussed on this PowerPage.

Background

- Caused by inability of the adrenal glands to produce cortisol (glucocorticoids and mineralocorticoids). Causes include:
  - Autoimmune/idiopathic factors
  - Granulomatous destruction of adrenal cortex
  - Secondary via a disruption in the adrenal-pituitary axis
- Commonly affected breeds include Standard Poodles, Portuguese Water Dogs, Rottweilers, and West Highland White Terriers, but any breed may be affected.

Clinical Signs

- Symptoms may include:
  - Weakness
  - Vomiting
  - Diarrhea (sometime vague gastrointestinal symptoms)
  - Finicky appetite
  - Dehydration
  - Bradycardia and low blood pressure
- Symptoms may be waxing and waning
- Addisonian crisis is a medical emergency

Laboratory Findings

- Elevated potassium, low sodium and chloride (lack of aldosterone leads to impaired renal sodium retention and potassium excretion)
  - Na:K ratio usually < 27:1
- Hypoglycemia
- Increased BUN and creatinine due to decreased renal perfusion from hypovolemia and hypotension (leading to decreased cardiac output)
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Diagnosis

- The test for diagnosis is the ACTH Stimulation test

Treatment

- Fluid of choice is 0.9% sodium chloride
- Supportive care with fluids and steroids are the mainstays of therapy
- Additional chronic treatment is life-long. Treatment of Addison’s includes:
  - Steroids: **DOCP injections** (mineralocorticoid), **oral prednisone** (glucocorticoid)
    - These are only started **AFTER the ACTH stimulation test** has been performed!
- The only steroid medication that can be given prior to the ACTH stim test is **Dexamethasone** and should be started in a crisis situation until the ACTH stim may be performed