Canine Hypercortisolism: **Diagnosis**

Clinical Signs:

- Common clinical signs include polyuria/polydipsia, polyphagia, panting, lethargy, abdominal distension, endocrine alopecia (and skin changes suggestive of endocrine disease), muscle atrophy (and muscle weakness), hepatomegaly and arterial hypertension.

Laboratory findings:

- Complete blood count may reveal neutrophilia, lymphopenia, eosinopenia (i.e. a stress leukogram), thrombocytosis, and (mild) erythrocytosis.
- A biochemistry panel may reveal increased liver values (especially alkaline phosphatase), hyperglycemia, hyperphosphatemia and hyperlipidemia.
- Urine examination may reveal a low specific gravity, proteinuria, indicators for urinary tract inflammation and glucosuria.

If clinical signs and laboratory findings are consistent with hypercortisolism: continue with screening test for hypercortisolism.

LDDST

- Cortisol > 40 nmol/l (1.4 µg/dL) at 8 hours after dexamethasone is consistent with hypercortisolism.
- Some endocrinologists use a cut-off value of 28 nmol/l (1.0 µg/dL).
- Lack of suppression at 4 hours after dexamethasone is also highly suspicious for hypercortisolism.

ACTH stimulation test

- Exaggerated cortisol response* after ACTH stimulation may be consistent with hypercortisolism.

UCCRs with oral HDDST

- Basal UCCRs above the cut-off level*, in a dog with clinical signs and biochemical changes consistent with hypercortisolism, strongly point to Cushing's syndrome.
- A very low UCCR makes spontaneous hypercortisolism very unlikely.
- In mild cases of hypercortisolism, a basal UCCR below the cut-off value may be found.
- Lack of suppression (< 50%) in the UCCR of day three points to hypercortisolism.

- If a screening test is negative but suspicion for hypercortisolism remains high, another screening test must be performed.
- If a screening test is positive, continue with **differentiation**.

Endogenous ACTH

- Endogenous ACTH concentration is suppressed* in dogs with hypercortisolism due to an adrenocortical tumour.
- Dogs with pituitary-dependent hypercortisolism will not have undetectable endogenous ACTH concentrations, but usually have values within the reference interval (for healthy dogs).

HDDST

- In dogs with hypercortisolism due to an adrenocortical tumour, dexamethasone does not suppress cortisol secretion; i.e. suppression is < 50%.
- In about 75% of dogs with pituitary-dependent hypercortisolism, cortisol values (either cortisol or UCCR) decrease at least 50% after administration of dexamethasone.

Diagnostic imaging of the pituitary area and the abdomen (and the thorax if metastases are suspected).

* The specific cut-off values of the laboratory should be used

Federico Fracassi
DVM, PhD, DECVIM-CA (internal medicine)
Department of Veterinary Medical Sciences-University of Bologna, Italy

Hans Kooistra
DVM, PhD, DECVIM-CA (internal medicine)
Department of Clinical Sciences-Faculty of Veterinary Medicine-Utrecht University, The Netherlands

* The specific reference range of the laboratory should be used
** In rare cases, secondary hypoadrenocorticism is detected (low endogenous ACTH)

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