

Hyperadrenocorticism in Syrian Hamsters

Definition

Hyperadrenocorticism (HAC), also known as Cushing's disease, is a condition where the adrenal glands produce an abnormally high amount of cortisol, corticosterone, and other steroids. This condition is described in hamsters, dogs, humans, horses, and other species. Hyperadrenocorticism occurs most commonly in 1-2-year-old male Syrian hamsters (*Mesocricetus auratus*, also called teddy bear or golden hamsters). However, it has also been diagnosed in females, European hamsters, and younger individuals. Please note that this disease is not the same as ferret adrenal disease. That disease affects a different section of the adrenal gland.

There are two main forms of HAC. In adrenal-dependent HAC, the adrenal gland itself is responsible for the increase in production, either due to hyperplasia (cell overgrowth) or a tumor. In pituitary-dependent HAC, disease in the pituitary gland (located near the brain) causes an increase in hormones that tell the adrenal gland to make steroids. Long-term administration of corticosteroids can also cause iatrogenic HAC, which is essentially too many steroids being put into the body over a long period of time. Regardless of the cause, the abnormally high steroid levels have effects throughout the body.

Signs & Symptoms

The most classic clinical sign of HAC is fur loss on the sides and thighs. It looks the same on both sides of the body as well, which is an important feature of this disease. The skin can become thinned and hyperpigmented (dark in color), but does not typically cause itching. The hamster may have increased appetite, increased thirst, and increased urination, as well as behavioral changes.

Diagnostics

Diagnosing HAC in hamsters can be challenging due to limited research, slightly altered steroid production, and the similarity of the symptoms to other diseases. Specific blood tests for plasma cortisol or corticosterone levels, urine tests, and abdominal ultrasound findings may offer support for a diagnosis. However, blood and urine tests for cortisol levels in hamsters can be difficult to perform due to their size and can be difficult to interpret. The history provided by you, specific physical examination findings, and ruling out other causes of hair loss, such as mites and ringworm, can be highly suggestive of HAC.

In addition to guiding diagnostics to assess for HAC, older hamsters may have other illnesses. Your veterinarian may recommend complete blood work or diagnostic imaging, such as radiographs (x-rays), to evaluate your hamster's overall health. The results of these diagnostics may affect treatment recommendations.

Key diagnostics

- Physical examination
- Complete bloodwork
- Ultrasound
- Endocrine panels



QUICK FACTS

- Fur loss that is the same on both sides of the hamster is a key clinical sign
- More common in male hamsters
- May be diagnosed through a medication trial

Treatment Options

There are several medications that have been attempted for the treatment of HAC in hamsters. Because of the small size of hamsters, these medications typically need to be specially formulated at a compounding pharmacy. The drug with the most success is trilostane. Trilostane stops enzymes in the adrenal gland, resulting in lower amounts of cortisol and other steroids in the body. This medication can have side effects, such as inappetence and diarrhea. This medication is given orally (by mouth), and therapy is often continued lifelong. Importantly, fur regrowth may occur over weeks to months, giving hope for the recovery of your hamster.

Other medications besides trilostane include metyrapone, ketoconazole, and mitotane. Metyrapone is another medication that inhibits specific enzymes in the adrenal gland. However, its use in hamsters has had limited success. Ketoconazole is an antifungal medication that can stop some enzymes in the adrenal gland. Mitotane is another medication that is similar to trilostane. However, neither ketoconazole nor mitotane have been shown to be effective in hamsters.

If left untreated, advanced adrenal disease can be uncomfortable due to skin damage and muscle wasting. Regular examinations are recommended to monitor hamsters with HAC during treatment.

Risk to Others

Hyperadrenocorticism is not infectious or transmissible to other animals.

Risk Factors

It is not known why some hamsters develop hyperadrenocorticism. This lack of understanding highlights the need for further research and knowledge in this area. It is thought there is some level of genetic component as some colonies develop it more frequently than others.

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