

Concurrent Canine Hyperadrenocorticism & Diabetes Mellitus

Jinelle Webb, DVM, MSc, DVSc, DACVIM (SAIM)

*Mississauga Oakville Veterinary Emergency Hospital
Oakville, Canada*

Obesity in dogs with HAC does not appear to increase the risk for developing DM.

In the Literature

Miceli DD, Pignataro OP, Castillo VA. Concurrent hyperadrenocorticism and diabetes mellitus in dogs. *Res Vet Sci.* 2017;115:425-431.

FROM THE PAGE ...

This study of 235 dogs with pituitary- or adrenal-dependent hyperadrenocorticism (HAC) examined the co-occurrence of diabetes mellitus (DM) and HAC and evaluated risk factors for development of DM in dogs with HAC. Dogs were divided into 3 groups (ie, fasting blood glucose <100 mg/dL, fasting blood glucose between 100 mg/dL and 180 mg/dL, fasting blood glucose >180 mg/dL). Parameters assessed included triglyceride level, cholesterol, urine cortisol:creatinine ratio, age, sex, breed, neuter status, BCS, cause of HAC, and median survival time.

DM occurred in conjunction with HAC in 13.61% of study dogs. Risk for developing DM was higher in dogs with a fasting glucose >100 mg/dL, even in patients in which overt DM was not yet apparent.



▲ **FIGURE 1** A male dog with hyperadrenocorticism, with classic alopecia and a pendulous abdomen.
Photo courtesy of Dr. Anthony Yu



▲ **FIGURE 2** Ultrasonographic image of the liver of a dog with HAC and DM. The hepatic parenchyma is hyperechoic, a finding common in dogs with either disease.

This suggests that dogs with HAC can experience a prediabetic state that may progress to clinical DM.

Other risk factors for development of DM included presence of pituitary-dependent HAC, urine cortisol:creatinine ratio $>100 \times 10^{-6}$, and intact status for female dogs. In addition, there was a trend toward increased risk in dogs with cholesterol levels >351 mg/dL or triglyceride levels >221 mg/dL. These findings support reducing hypercortisolemia as effectively as possible, as the degree of control is likely related to risk for developing concurrent DM.

In this cohort of dogs, obesity did not increase risk for developing DM. Purebred dogs were also not at increased risk as compared with crossbreed dogs. It is possible that obesity was partially corrected with treatment for HAC and resulted in improved response to endogenous insulin.

Median survival time was shorter in dogs with both concurrent HAC and DM as compared with those with HAC alone. Recognition of risk factors linked to development of DM, and early intervention to address these risk factors, may reduce the number of patients with HAC that develop overt DM.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Controlling hypercortisolemia in dogs with HAC may decrease risk for development of concurrent DM.
- 2** Obesity in dogs with HAC does not appear to increase the risk for developing DM.
- 3** Early recognition and intervention to address risk factors may reduce incidence of concurrent DM development in dogs with HAC.



AVMA PET OWNERSHIP AND DEMOGRAPHICS SOURCEBOOK

Better understand your potential customer base and set yourself apart from competition.

avma.org/PetDemo

