

Diabetes mellitus or high blood glucose (sugar) is one of the more common endocrine diseases in dogs and cats. It is typically caused by a lack of insulin which is produced by the pancreas.

After eating a meal, insulin is required for glucose to move from the blood into the cells to be used as a source of energy. Without insulin, the glucose remains in the blood. The body tries to get rid of the excessive glucose by eliminating it into the urine. Glucose lost in the urine results in the production of large volumes of urine. The animal will then drink more water in order to compensate for the fluid loss.

Common clinical signs of diabetes are: drinking excessively, urinating large amounts, increased appetite, weight loss, cataract formation (dogs), and weakness (cats). Other nonspecific clinical signs are vomiting, not eating, lethargy, and diarrhea.

Many factors can cause diabetes. In dogs, diabetes can occur from immune mediated destruction of the cells within the pancreas responsible for producing insulin. Obesity or episodes of pancreatitis also may play a role in the development of diabetes. In cats, a protein, amylin, is secreted along with the insulin. This amylin is deposited within the pancreas which damages the insulin-producing cells. Obesity also contributes to the development of diabetes in cats. Occasionally, a dog or cat can become diabetic secondary to the use of long-acting injectable steroids or the chronic use of steroids, such as prednisone.

Treatment of diabetes most likely will require insulin injections. Also, specialized diets might be recommended at the time of diagnosis. The goal of therapy is to minimize the clinical signs related to the diabetes and to improve the animal's quality of life.

Initially, periodic visits to the veterinarian will be needed in order to establish the appropriate dose and type of insulin. This will entail blood glucose checks every 1-2 hours (glucose curve) on the day of the appointment. This is important so that the veterinarian can determine how low the blood glucose drops and how long the insulin lasts.

At the OSU Center for Veterinary Health Sciences, an alternative to the traditional glucose

curve is available using specialized equipment consisting of a tiny catheter placed just under the skin. This method is not painful and will measure the glucose levels every 5 minutes for up to 72 hours using a wireless transmitter. This minimizes blood sampling and allows for a more accurate analysis.

If the diabetes is not treated, life-threatening metabolic derangements can occur. The good news is the majority of diabetic dogs and cats respond well to appropriate therapy.

This column is provided by the faculty of the OSU Boren Veterinary Medical Teaching Hospital.

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