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DIABETES MELLITUS

WHAT IS DIABETES MELLITUS?

Insulin is the hormone made by cells in the pancreas that is required for most cells in the body to take in sugar from the blood stream to use for energy. Diabetes mellitus results from a true (dogs or cats) or relative (cats) lack of insulin.

- Cells cannot utilize glucose from the blood.
- The body burns other fuels (fats, proteins) for energy.
- There is an excess of glucose in the blood as there is not enough insulin to drive the glucose into the cells.
- There is so much glucose in the blood that glucose spills into the urine causing increased water loss from the body.

The main clinical signs of diabetes mellitus are increased appetite, increased thirst, increased urination, weight loss, cataracts (dogs), and rarely nerve dysfunction. When diabetes mellitus progresses, the metabolism of fats for energy causes a build-up of acids called ketones. At this point, the pet feels sick and there can be a loss of appetite and thirst as well as vomiting, weakness, and lethargy.

DIAGNOSIS

The diagnosis of diabetes mellitus is fairly straight forward and is based on clinical signs, blood tests and a urinalysis. Other testing may include a urine culture, acid-base analysis, abdominal radiographs and/or ultrasound, especially in pets that are dehydrated and vomiting.

TREATMENT

Diabetic ketoacidosis is a sequela to untreated diabetes mellitus and causes the pet to be severely ill. Intensive therapy includes intravenous fluids and insulin, closely monitoring blood sugar, phosphorous, acid/base, and electrolyte (sodium and potassium) levels. It can take 2-4 days to stabilize the pet so that the nausea resolves and they regain their appetite.

Insulin: The dose and type of insulin to be administered will be determined by the veterinarian. An initial starting dose will be prescribed and the dose will be changed according to blood sugar values, fructosamine concentrations and clinical response to treatment. The technique of subcutaneous insulin administration will be demonstrated by your veterinarian or veterinary technician. Your pet's insulin and syringes may be obtained from your regular pharmacy or your veterinarian. Vetsulin and PZI are only available through a veterinary clinic. It is a good idea to keep a diary showing time and amount of insulin administered. Never alter the insulin dose recommended by your veterinarian. It is only through careful monitoring that the insulin dose should be adjusted. Your pet's blood glucose can also be checked at home with a glucometer. We do have the home kits available for purchase. For more information go to www.alphatrakmeter.com/Page2.html. Recheck exams are crucial to adequate regulation.

Diet: As in humans, diet plays a big roll in controlling diabetes. Diets contain digestable fiber, monderately high protein, complex carbohydrates, and low fat. Several prescription diets are available. Canned diets are best for feline diabetics as they benefit from the increased water in these diets.

Canine diabetic maintenance diets include: Iams/Eukanuba Optimum Weight Control dry food, Royal Canin Diabetic HF 18 dry food, Purina DCO dry food, and Hills W/D dry/can food.

Overweight diabetic canine diets include: Purina OM dry/can food, Hill's R/D dry/can food and Iams/Eukanuba Restricted Calorie dry/can food.

Feline diabetic maintenance diets include: Hill's M/D or W/D dry/can food, Purina DM dry/can food, Royal Canin Diabetic DS 44 dry food, or Iams/Eukanuba Optimum Weight Control dry food.

Overweight diabetic feline diets include: Purina OM dry/can food, Hill's R/D dry/can food, or Iams/Eukanuba Restricted Calorie dry/can food.

Exercise: Consistent day to day exercise will help your pet be better regulated. Changing the amount of exercise from day to day will change the insulin requirement and can be harmful to your pet. An increase in muscle activity can lead to a lower blood sugar.

Goals: Eventually, when your pet is regulated, the blood sugar should be between 100 and 200 mg/dl for the majority of a 24 hour period. Your pet should eat and drink normally and have a good quality of life.

Once regulated, your pet should be rechecked every 3-6 months or any time you notice signs of diabetes mellitus returning or if your pet is not doing well. If you pet appears wobbly or drunken, his/her blood sugar level may have dropped too low. Administer 1-2 tablespoons of Karo syrup by mouth. If no improvement occurs, immediately see your veterinarian for emergency treatment.

Some pets are difficult to regulate.

Some pets seem to require re-regulation frequently. There may be an underlying reason to sort out. Here are some possibilities should your pet fit into this category:

- Improper administration of insulin. If possible, have your doctor observe you giving the insulin to your pet.
- Your insulin may be out of date.
- Rapid insulin metabolism. Insulin wears off quickly in some animals. Your pet may require a different type of insulin or a second injection during the day.
- Chronic insulin overdose.
- Steroid administration (such as prednisone, prednisolone, etc.).
- Progesterone also interferes with insulin. (Unspayed female diabetics should be spayed once they are sufficiently regulated).
- A urinary tract infection (diabetics have sugar in their urine making them more prone to urinary tract infections).

PROGNOSIS

Most pets with diabetes mellitus have a good quality of life and a normal life span.