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**Canine Diabetes Mellitus: Diagnosis, Adequate Care and
Overall Management Practices Involved**

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Abstract

Diabetes mellitus is caused in pet animals due to inadequate production of insulin by the islet beta cells in the pancreas. Glucose in the urine causes the diabetic animal to excrete large volumes of urine. In turn, this creates dehydration and the urge to drink large amounts of water. Females with the disease outnumber males by three to one. The average age of onset is 6 to 9 years.

Key- Words: Diabetes, Dogs, Insulin

Introduction

There may be a genetic predisposition for diabetes in some dogs. Dog breeds *viz.*, Golden Retrievers, Miniature Schnauzers, Keeshonden, German Shepherd Dogs and Poodles have the highest incidence. All breeds can be affected by diabetes. Islet cell destruction along with pancreatitis also occurs. Insulin deficiency results in hyperglycemia (high blood sugar) and glycosuria (high urine sugar).^[1]

Signs and Symptoms

The signs of early diabetes are frequent urination, drinking lots of water, a large appetite, and unexplained loss of weight. The laboratory findings are high glucose levels in the blood and urine. More advanced cases of diabetes in dog is characterized by lethargy, loss of appetite, weakness, vomiting, dehydration and coma, cataracts, hepatomegaly with increased susceptibility to infections and often develop neurological problems if not treated.^[2,3]

Associated metabolic complications

Initially, dogs having incompetency to metabolize enough sugar have an increase in appetite and a desire to consume more food. The amount to feed is determined by dividing the daily caloric requirement by the amount of calories per cup or can of food. The insulin requirements are computed on that basis by keeping constancy in daily calorie requirement in relation to body weight gain. The meal should be divided into two or three equal portions or as directed by your veterinarian. It is equally important to maintain a strict schedule for insulin injections. Ideally, the affected dog should have the same levels of exercise and activity.^[3]

Control and preventive measures

Dietary control and daily injections of insulin can regulate most diabetic dogs, allowing them to lead active, healthy lives. Oral hypoglycemic agents used for treating diabetes in people have not been effective in dogs, but research is continuing in this area.

Insulin requirements cannot be predicted solely on the basis of the dog's weight, because the degree of pancreatic failure is different in every dog. The daily caloric requirements are determined by the weight and activity level of the dog. The monitoring of blood glucose curve (a series of blood sugar tests drawn over 12-24 h period) is recommended for assessment of requirement of insulin.

Accordingly, an overweight dog is more prone to diabetes and should be put on a high-fiber, high-carbohydrate diet until he reaches an ideal weight.^[4]

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Conclusion and Summary

Diabetic ketoacidosis is a condition in dogs associated with severe hyperglycemia in which ketones (acids) build up in the blood. Ketones are by-products of the metabolism of fat. Diabetic ketoacidosis is fatal to dogs. In diabetic ketoacidosis, fats are metabolized for energy because sugar is unavailable. Diabetic ketoacidosis can be recognized by weakness, vomiting, rapid breathing, and the odor of acetone on the breath.

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