Oral Hypoglycemic Agents (Glipizide) for the Treatment of Diabetes in Cats

Drs. Foster & Smith Educational Staff

How is diabetes controlled with oral medications?

Some cats respond to glipizide, an oral medication which lowers blood sugar. Exactly how glipizide works is not known. It is impossible to predict which cats will respond to this medication, although some insulin production must be present for the medication to be effective. In general, cats who have NIDDM, only mild signs, no complicating disease, are not underweight, have not had ketosis, and can be on a high fiber diet are the best candidates for treatment with glipizide.

How is glipizide administered?

Glipizide is usually given twice daily with a meal. The cat should be fed a diet high in fiber and complex carbohydrates. If a cat is obese, she should be placed on a gradual weight reduction diet. She should not lose more than 3% of her body weight per week. Too rapid weight reduction can lead to hepatic lipidosis.

How can we determine if the glipizide therapy is effective?

The cat is monitored through regular physical exams, body weight, measurement of urine glucose and ketones, and general signs, e.g., drinking and urination, and random blood glucose testing. The aim is to keep the blood glucose level less than 200 mg/dL. Approximately 50% of cats respond to the treatment, though some only partially. Most of the cats who respond do so within 4-5 weeks of starting treatment. If a cat responds, the glipizide treatment is stopped and the cat is re-evaluated every 1-2 weeks. If the blood glucose level increases, the cat can be placed on glipizide therapy again.

Are there any potentially harmful effects of glipizide therapy?

Glipizide therapy is not without risks. Although rare, a cat may develop hypoglycemia (a lower than normal blood glucose level) while being treated with glipizide. This is an emergency, and signs include lethargy, depression, incoordination, coma and seizures. At home, a cat with hypoglycemia is treated by giving the cat corn syrup (if she can swallow) or applying corn syrup to her gums. Your veterinarian should be contacted, and the cat brought to the veterinary hospital.

Some cats may develop liver problems while on glipizide, so chemical tests to evaluate the liver may be performed during treatment. Some cats vomit when given glipizide, however, giving glipizide with food often corrects this problem. Some cats lose their appetite when started on glipizide; if this occurs, the dosage is often lowered and then gradually increased.

Cats who do not respond to glipizide may develop more severe clinical signs or even ketoacidosis if close monitoring and early identification of the problem do not occur.

Is glipizide the only oral hypoglycemic agent that can be used in cats?

Glipizide (Glucotrol® made by Pfizer) is certainly the most studied oral hypoglycemic agent in cats, although it is a human product. Glipizide is in the class of drugs called sulfonylureas; another sulfonylurea is the human drug called glyburide (Diabeta® by Hoechst Marion Roussel). Newer medications have become available for people including biguanides, which occur in the French lilac (Galega officinalis) and the man-made medication metformin (Glucophage® by Bristol-Myers Squibb); alpha-glucosidase inhibitors such as acarbose (Precose® made by Bayer); and thiazolidinediones (Rezulin™ made by Parke-Davis). A trace element called vanadium has had some effect in reducing the blood glucose level in rats. The use of these medications in cats is in the research stage.

Summary

Glipizide may be an effective therapy in approximately 50% of cats with non-insulin dependent diabetes mellitus. Some insulin production is necessary for glipizide therapy to be effective. Cats generally respond to glipizide therapy within 4-6 weeks of starting treatment. Adverse effects may include hypoglycemia, vomiting, and liver disease. If the cat does not respond to glipizide, the clinical condition of the cat could deteriorate and the cat could develop ketoacidosis.