

# Ferret Insulinoma

## *Information for the Ferret Owner*

Occasionally a mature ferret might start to exhibit sporadic weakness. The weakness is usually prominent in the rear legs of the ferret. One of the differential diagnoses that your veterinarian should include in the list of causes for this is an insulinoma. An insulinoma is a type of cancer in the beta cells that secrete insulin in the pancreas. This single (or multiple) tumor over-produces insulin. This results in a lowering of the blood glucose.

Diagnosis can be difficult because of the ferret's body quick ability to raise their blood sugar in times of stress or low blood sugar. By the time the ferret is seen by your veterinarian, the blood sugar may be back to normal.

Diagnosis is routinely made on the clinical signs, the age of the ferret and the ferret's response to oral sugar (e.g., corn syrup).

If during one of these weak episodes, the ferret becomes normal quickly after rubbing corn syrup on their gums (do not try to have the ferret swallow the corn syrup), a tentative diagnosis of low blood sugar can be made.

### ***history and diagnosis***

- history - usually slow onset, increasing weakness, lethargy and hypersalivation. Rarely will the blood glucose be so low to cause seizures. Ferrets can show rear limb weakness that mimics spinal cord disease.
- blood glucose under 70 mg/dl.
- can do insulin levels. Over 350 pmol/L with hypoglycemia is suspicious.

### ***Treatment Options***

There are a variety of treatment options available. Unfortunately at this time, there is no cure.

1. Surgery. Surgical treatment consists of excising the affected pancreatic tissue. In solitary tumors, this works well although recurrence of the tumor is likely. Multiple pancreatic tumors are not treatable by surgery and must be managed by medicines. Surgery, on average, extends good quality life about 9 months.

2. Use of steroids and other medications. Medical treatment consists of lessening the effects of the high insulin or increasing the blood sugar. Prednisone will cause blood sugar elevation and works for most ferrets. Another medication, diazoxide, works by inhibiting the effect of insulin on the cells. Both these medications are life long. Prednisone is inexpensive, where the diazoxide is expensive. Some ferrets need both medications to control their low blood sugar. In combination, these medications extend life about 8-9 months.

3. Chemotherapy. At the Hospital, we have used a chemotherapy drug on numerous ferrets and have been pleased with the results. Some ferrets have remained symptom free for over 3 year. The treatment is 4 injections of a drug called doxorubicin given every 3 weeks. Side effects are minimal but may include vomiting or heart problems.

We have had good long term success with using all three. Some ferrets have lived over 2-3 years using a combination. It can be cost prohibitive however.



Exotic and Bird Clinic of New Hampshire  
91 North Stark Highway  
Weare, New Hampshire  
(603) 529 - 4999