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Helicobacter Infection in Ferrets

Basics

OVERVIEW

- *Helicobacter* species are gram-negative, urease-positive bacteria.
- The discovery of the association of *Helicobacter pylori* with inflammation of the stomach (known as “gastritis”), stomach ulcers, and stomach cancer has changed the understanding of stomach disease in people. The disease in ferrets is studied as a model of *Helicobacter*-induced disease in people.
- Nearly 100% of ferrets are infected with *Helicobacter mustelae* by weaning. However, only a small percentage of these ferrets will develop helicobacter-associated disease. Disease is seen most commonly in ferrets that have been stressed or have other concurrent disease.
- Colonization of the stomach by *H. mustelae* can cause increased secretion of stomach acid, causing stomach ulcers and irritation and inflammation of the stomach lining.
- *H. mustelae* has also been associated with gastric cancers (adenocarcinoma or lymphoma) in ferrets; ferrets with long-standing stomach ulcers are at increased risk for developing gastric cancer.



SIGNALMENT

Helicobacter-induced disease can be seen in any aged ferret.

SIGNS

- Helicobacter infection without any sign of disease is common.
- Lack of appetite (known as anorexia), diarrhea, black tarry stools, and vomiting
- Symptoms of abdominal pain, including grinding the teeth, a hunched posture, and reluctance to move
- Signs of nausea such as increased salivation and pawing at the mouth
- With long-standing infection, see weight loss, weakness, and loss of muscle mass
- May have signs of dehydration from fluid and electrolyte loss due to vomiting and/or diarrhea

CAUSES

Helicobacter mustelae

RISK FACTORS

Stress, concurrent illness (e.g., epizootic catarrhal enteritis, other intestinal bacteria or parasites, insulinoma, lymphoma or other cancer)

TREATMENT

HEALTH CARE

- Ferrets that are not eating or that are vomiting or dehydrated require hospitalization.
- Ferrets that will still eat and are not vomiting may be treated on an outpatient basis.
- Fluid therapy, either by IV or subcutaneous administration depending on the severity of symptoms, should be administered to dehydrated patients.

DIET

- If the normal diet is refused, offer a high-calorie diet such as Eukanuba Maximum Calorie diet (Iams Co., Dayton, OH), Feline a/d (Hills Products, Topeka, KS), human chicken-based baby foods, or Clinicare Feline liquid diet (Abbott Laboratories, North Chicago, IL).
- Warming the food to body temperature or offering via syringe may increase acceptance.

MEDICATIONS

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered all-inclusive.

Antibiotics (combined with antisecretory agent)

- Common antibiotics include clarithromycin, metronidazole and amoxicillin
- Bismuth subsalicylate (original Pepto-Bismol)
- Antibiotics are given 2–3 times a day for 2–4 weeks

Antisecretory Agents (combined with antibiotic)

- Omeprazole, famotidine, ranitidine, or cimetidine
- Usually given for at least 2 weeks, may be needed long-term

FOLLOW-UP

PATIENT MONITORING

Monitor for resolution of vomiting and/or diarrhea and return of appetite.

PREVENTION/AVOIDANCE

- Identify and treat any underlying diseases.
- Gastrointestinal antisecretory agents are helpful to treat, and possibly prevent gastritis in ferrets that are not eating. Ferrets continually secrete a baseline level of gastric acid; therefore, not eating may predispose to gastric ulceration.
- Avoid overcrowding and unsanitary conditions.

POSSIBLE COMPLICATIONS

- Recurrence
- Lack of response to therapy in severely debilitated ferrets

EXPECTED COURSE AND PROGNOSIS

- Most infections are eradicated by using antibiotic and antisecretory agent combinations
- Some ferrets with chronic infections are severely debilitated and will not respond to treatment.
- Recurrence is common, especially under stressful conditions. Repeat therapy may be necessary.

KEY POINTS

- Establishing a definitive diagnosis of helicobacter infection is difficult.
- *Helicobacter* may be found in normal ferrets; overgrowth of bacteria can lead to stomach irritation and ulcers.
- Treatment with antibiotic and antisecretory (antacid) combination therapy is usually effective, although relapses are common.

Notes

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