

Treatment Recommendations for Feline Pancreatitis

Background

Pancreatitis is an elusive disease in cats and consequently has been underdiagnosed. This is owing to several factors. Cats with pancreatitis present with vague signs of illness, including lethargy, decreased appetite, dehydration and weight loss. Physical examination and routine laboratory findings are nonspecific, and until recently, there have been limited diagnostic tools available to the practitioner for noninvasively diagnosing pancreatitis. As a consequence of the difficulty in diagnosing the disease, therapy options are not well understood.

Now available, the SNAP® fPL™ and Spec fPL™ tests can help rule in or rule out pancreatitis in cats presenting with nonspecific signs of illness. As our understanding of this disease improves, new specific treatment modalities may emerge. For now, the focus is on managing cats with this disease, and we now have the tools available to more critically evaluate these cases.

Placebo-controlled studies in people have revealed that the only treatment strategies proven effective for pancreatitis are fluid therapy, pain management and nutritional support. These are also the mainstay of therapy for treating cats with pancreatitis. Studies have shown, however, that approximately 2/3 of cats with pancreatitis have chronic disease for which treatment recommendations are less clear.^{1,2} In addition, many cats are affected by concurrent illnesses (e.g., diabetes mellitus, hepatic lipidosis, cholangitis and inflammatory bowel disease).³⁻⁵ Diagnosis and management of both pancreatitis and concurrent conditions are critical to a successful outcome.⁶

Fluid Therapy

Intravenous fluid therapy is key to supporting a patient with pancreatitis. The main goal is to ensure that the pancreas is being adequately perfused. Initially, fluids should correct dehydration over the first 12–24 hours while also meeting maintenance needs and replacing ongoing losses of fluids from vomiting, diarrhea and third-space losses (e.g., peritoneal effusions secondary to pancreatitis). Acid-base and electrolyte abnormalities should be monitored closely and corrected. If hypocalcemia is noted in a cat with acute necrotizing pancreatitis, calcium gluconate should be given at doses of 50–150 mg/kg intravenously over 12–24 hours and serum total or ionized calcium concentrations should be monitored during therapy. Colloids, such as dextran or hetastarch, can be used to support oncotic pressure, especially in patients that are hypoalbuminemic. Plasma

therapy, although not as readily available for cats as it is for dogs, can be used if there is evidence of coagulopathy or disseminated intravascular coagulation (DIC).

Pain Management

Abdominal pain is frequently recognized in dogs with pancreatitis; however, it is rarely recognized in cats. Nonetheless, many cats will show clinical improvement if provided analgesic therapy. Because of this, many experts agree that pain management should be provided in all cats with acute pancreatitis. Opioid therapy is recommended. Fentanyl transdermal patches have become popular for pain relief because they provide a longer duration of analgesia. It takes at least 6 hours to achieve adequate fentanyl levels for pain control; therefore, one recommended protocol is to administer another analgesic, such as intravenous buprenorphine, at the time the fentanyl patch is placed. The cat is then monitored closely to see if additional pain medication is required. Cats with chronic pancreatitis may also benefit from pain management, and options for outpatient treatment include a fentanyl patch, sublingual buprenorphine, oral butorphanol or tramadol.

Antiemetic Therapy

Vomiting, a hallmark of pancreatitis in dogs, may be absent or intermittent in cats. When present, vomiting should be controlled; and if absent, treatment with an antiemetic should still be considered to treat nausea. There are several antiemetics available. Metoclopramide (Reglan®) is a popular antiemetic in cats and is still used by many practitioners. However, metoclopramide is a dopamine antagonist and inhibits vomiting by blocking the central nervous system (CNS) dopamine receptors in the chemoreceptor trigger zone (CRTZ). It is probably not a very good antiemetic in cats because they are reported to have few CNS dopamine receptors in the CRTZ. Dolasetron (Anzemet®) and ondansetron (Zofran®) act on the serotonin 5-HT₃ receptors in the CRTZ and are very effective in cats. Lastly, although maropitant citrate (Cerenia™) is only labeled for use in dogs, it has become a popular and effective antiemetic for use in cats and acts on the neurokinin (NK) receptors in the vomiting center and can be used at 1/2 of the dog dose.

Nutritional Support

Experts recommend enteral nutritional support in all patients with pancreatitis. The historical recommendation of nothing per os (NPO) for animals with pancreatitis is no longer

accepted. In addition, cats can develop hepatic lipidosis if not provided adequate calories. The new dogma has become this: if the gastrointestinal tract works, use it; and if the patient is vomiting, give an antiemetic so that they keep the food down. Enteral nutrition stabilizes the gastrointestinal barrier, improves enterocyte health and immune function, improves gastrointestinal motility, prevents catabolism and decreases morbidity and mortality. Cats with pancreatitis are inappetent; therefore, ingestion of adequate calories is rare. Force feeding is not recommended because it is difficult to achieve the appropriate level of caloric intake, and force feeding can also lead to food aversion.⁷ Enteral nutrition can be provided by a variety of feeding tubes, including nasogastric, nasoesophageal, esophagostomy, gastrostomy or jejunostomy tubes.

If vomiting cannot be controlled, then partial parenteral nutrition (PPN) or total parenteral nutrition (TPN) can be provided to meet some or all of the patient's caloric needs. TPN is typically only available in 24-hour care facilities, but PPN is more user-friendly and practical for use in any practice. However, although parenteral nutrition supports the patient's caloric needs, it doesn't nourish the enterocytes. Therefore, some specialists recommend providing microenteral nutrition by trickle feeding through a feeding tube to provide nourishment to the gastrointestinal tract. It has been shown that even a small amount of enteral nutrition can prevent the complications of NPO.

Diet Selection

There are no studies to support dietary choices for cats with pancreatitis. Nutritional experts do not believe that high-fat foods are implicated in causing pancreatitis in cats. However, some internists avoid high-fat diets because they have anecdotally recognized an association. Liquid diets are required for use in nasogastric, nasoesophageal and jejunostomy tubes. Commercially available CliniCare[®] Canine/Feline Liquid Diet (Abbott Animal Health) is high in fat but commonly used. Human-formulated liquid diets are too low in protein to be used in cats. Low-residue, low-fat, easy-to-digest blended canned diets can be used in esophagostomy or gastrostomy tubes.

Recommendations for feeding cats with pancreatitis are based upon opinion. Trial and error is often required to find a diet that works for a particular cat. One challenge is that cats with pancreatitis often have concurrent disease. A low-residue diet might be the diet of choice in a cat that only has pancreatitis, but if concurrent intestinal disease is present, then a novel protein diet might be a better choice. The caveat for owners is that the cat must eat. So if their cat won't eat one of these special diets, they need to go back to whatever they were previously feeding.

Appetite Stimulants

Appetite stimulants can help to support caloric intake, may reduce the need for feeding tube placement, may decrease dependency on the feeding tube over time and may support the removal of feeding tubes in cats with pancreatitis. Mirtazapine (Remeron[®]) can be used off-label at a dose of $\frac{1}{4}$ of a 15-mg tablet once every 3 days. Cyproheptadine

is labeled for use in cats but needs to be administered twice daily.

Glucocorticoid Therapy

It is common for cats with pancreatitis to have other concurrent conditions. The term "triaditis" has been used to describe the complex of cholangitis, inflammatory bowel disease and pancreatitis. Treatment with anti-inflammatory doses of prednisone, prednisolone or dexamethasone is not contraindicated in these cats and can be quite effective. Cats with chronic pancreatitis alone may actually benefit from the anti-inflammatory effects of corticosteroids.

Antibiotic Therapy

Pancreatitis is usually a sterile process in cats and antibiotics are rarely indicated. Indications for their use include sepsis (may result from bacterial translocation from the gastrointestinal tract), bacterial peritonitis, other infections (e.g., urinary tract infection) and possibly in cases with a suppurative cholangiohepatitis where a suppurative pancreatitis is suspected. Although, there may not be grounds for using antibiotics, there may be a rationale for not using them since some antibiotics can cause nausea and vomiting in cats.

Antacid Therapy

H₂-receptor antagonists (ranitidine or famotidine) or proton-pump inhibitors (pantoprazole) are not routinely recommended but should be considered if there is concern for gastrointestinal ulceration.

Antioxidant Therapy

There is some rationale to consider antioxidant therapy in cats with pancreatitis. Vitamins C and E, silybin, S-Adenosylmethionine (SAMe) and omega-3 fatty acids could be prescribed. Veterinary products, Marin[™] (vitamin E and silybin), Denosyl[®] (SAMe) and Denamarin[®] (SAMe and silybin), manufactured by Nutramax Laboratories, Inc., are available for cats.

Cobalamin (Vitamin B₁₂) Supplementation

Cobalamin (vitamin B₁₂) is a water-soluble vitamin that is absorbed in the ileum. Reduction in serum cobalamin concentrations can be seen in cats with gastrointestinal disease such as inflammatory bowel disease. It is common for cats with pancreatitis to concurrently have gastrointestinal disease; therefore, measuring serum cobalamin concentrations in cats with pancreatitis is recommended. If a cobalamin deficiency is documented, it should be supplemented by parenteral injection. Generic formulations of cobalamin are readily available and extremely cost effective. The recommended dose for cats is 250 μ g/injection; with one dose weekly for 6 weeks, followed by one dose every 2 weeks for 6 weeks, then monthly injections.⁸

Insulin Therapy

Cats with acute pancreatitis can become insulin resistant and develop transient diabetes mellitus.⁴ The diabetes

may resolve or become permanent, especially if chronic pancreatitis persists. Insulin therapy should be tailored to the individual cat with awareness that the insulin requirements may vary as a result of waxing and waning of the severity of the pancreatitis.

Monitoring Acute Pancreatitis

Hospitalized cats require close monitoring. Body weight and respiratory rate should be monitored to make sure that fluids are being tolerated. Packed cell volume (PCV), total solids, electrolytes, total or ionized calcium, BUN and creatinine, acid-base status, blood pressure and urine output should be assessed daily. A CBC, chemistry panel and even lactate levels can be repeated every 2–3 days until favorable trends are established. In severe cases or if there is evidence of a coagulopathy, the cat should be monitored for development of DIC (e.g., PT, PTT, platelets, fibrinogen, FDPs, D-dimer). Cats should be watched for the development of icterus as evidence of biliary obstruction and watched for the development of persistent or progressive hyperglycemia or ketosis. In addition, monitoring the Spec fPL concentration every 2–3 days in hospitalized cats can help to assess reduction in pancreatic inflammation.

Monitoring Chronic Pancreatitis

The frequency with which cats with chronic pancreatitis should be reassessed will depend upon their progress, the presence or absence of concurrent conditions and their therapeutic regime. Biweekly visits initially after diagnosis would be reasonable to discuss progress with the owner paying close attention to activity level, appetite and body weight. Laboratory testing will depend upon their concurrent conditions and the Spec fPL concentration can be used to evaluate the pancreatitis.

When treating with glucocorticoids, it is recommended to have a baseline Spec fPL Test. A recheck 10–14 days after initiating therapy is recommended to assess response. If the cat has clinically improved and the Spec fPL concentration has decreased, then therapy should be continued. If no improvement is evident and the Spec fPL concentration has remained unchanged or increased, then therapy should be discontinued.

In cats with concurrent pancreatitis and intestinal disease in which cobalamin supplementation is initiated, repeat cobalamin and Spec fPL concentrations should be reassessed one month after initiation of cobalamin therapy.

Prognosis

The prognosis for cats with pancreatitis is directly related to the severity of the disease. Cats with acute, severe disease, especially if systemic complications are present, have a poor prognosis. Hypocalcemia is a complication of feline acute necrotizing pancreatitis that is associated with a worse prognosis.⁹ One study revealed that cats with concurrent acute pancreatitis and hepatic lipidosis have a poorer prognosis than cats with hepatic lipidosis alone.³ Chronic pancreatitis is common in cats and long-term management and commitment by the owner is required. In addition, pancreatitis may complicate management of

concurrent diseases such as diabetes mellitus, inflammatory bowel disease and cholangiohepatitis. The well-being of these cats will depend upon the successful management of all concurrent conditions.

Learn More About the SNAP fPL and Spec fPL Tests as a Diagnostic Tools for Your Practice

If you have any questions regarding the SNAP fPL Test or how to interpret test results, please call our team of internal medicine specialists at 1-888-433-9987. To order, contact your authorized IDEXX distributor or call 1-800-355-2896.

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The information contained herein is intended to provide general guidance only. As with any diagnosis or treatment, you should use clinical discretion with each patient based on a complete evaluation of the patient, including history, physical presentation and complete laboratory data. With respect to any drug therapy or monitoring program, you should refer to product inserts for a complete description of dosages, indications, interactions and cautions.

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