

Pancreatitis – Feline

Kathryn E. Michel, DVM, MS, DACVN

Definition

Pancreatitis is an inflammatory condition that can be acute or chronic. Clinical signs can range from mild with minimal systemic effects to extremely severe disease characterized by pancreatic necrosis leading to the systemic inflammatory response syndrome (SIRS) and circulatory collapse.

Key Diagnostic Tools and Measures

Pancreatitis can be a challenging condition to diagnose as, aside from pancreatic biopsy, there are no specific diagnostic tests for this disease. Diagnosis is further complicated by the fact that the clinical presentation of this condition in cats differs significantly from dogs. In feline pancreatitis, the most common clinical signs are nonspecific (anorexia, lethargy, and dehydration), whereas the classic signs associated with canine pancreatitis (vomiting and abdominal pain) are relatively uncommon in cats.¹ The clinician will need to rely on his/her acumen utilizing the patient's clinical presentation, the results of clinical chemistry (serum chemistry, complete blood count [CBC], and urinalysis coupled with pancreatic biomarkers such as feline pancreatic lipase immunoreactivity [fPLI] and feline trypsin-like immunoreactivity [fTLI]), and imaging to arrive at a diagnosis.

A complete diet history should be taken that includes information about typical food intake and any commercial pet foods and treats that the patient receives, including table foods or scraps (see Appendix II).

The patient's nutritional status should be assessed with special attention paid to the duration of anorexia, evidence of weight loss (in particular, muscle wasting), severity of gastrointestinal signs, feasibility of assisted feeding, and concurrent medical conditions.

Pathophysiology

In the majority of cats, an inciting cause of pancreatic inflammation cannot be determined although infectious agents (*Toxoplasma gondii*, flukes, feline infectious peritonitis [FIP]), organophosphate pesticides, drugs, trauma, surgical manipulation, and ischemia have been implicated in the pathogenesis of this condition. There also has been speculation about the common association of feline pancreatitis with inflammatory bowel disease and cholangiohepatitis and the possibility of a related etiopathogenesis.²

Pancreatitis results from the failure of the protective mechanisms that normally ensure that the zymogens stored within the cells of the pancreas remain in an inactive form until they enter the duodenum. The activation of these zymogens within the pancreatic tissue unleashes their proteolytic effects resulting in tissue damage and inflammation.

In the acute form of the disease, the inflammatory response that accompanies severe pancreatitis produces a catabolic state that can cause a rapid deterioration in nutritional status. This decline in nutritional status is complicated by the fact that it is necessary to withhold oral food intake from patients that are experiencing nausea, vomiting, abdominal pain, ileus, or hemodynamic instability.

In the chronic form of feline pancreatitis, since anorexia is one of the most common clinical findings, patients often present with evidence of malnutrition, in particular, weight loss characterized by muscle wasting. It is imperative that muscle mass be assessed by physical palpation as patients can present with excess body fat and an obese appearance despite having experienced significant muscle wasting.

Signalment

There have not yet been any reports of definite associations between age, breed, or neuter status and the risk of feline pancreatitis.

Key Nutrient Modifications

Avoidance of oral intake of high-fat foods has been advocated for patients recovering from pancreatitis because fat (as well as protein) is a potent stimulus of pancreatic secretion and the concern is that, in a convalescent patient, pancreatic overstimulation might lead to a relapse. Cats have metabolic adaptations, however, that reflect this species' evolution on a diet rich in protein and fat but lacking any significant amounts of carbohydrates. As a consequence, most cat foods are relatively high in fat and protein. The lower-fat cat foods that are available will still contain moderate amounts of fat, high protein, and often have a low caloric density. While the impact of dietary fat intake on clinical outcome in cats diagnosed with feline pancreatitis has not been evaluated in a clinical trial, anecdotally, cats recovering from pancreatitis appear to tolerate typical cat foods including those containing high amounts of fat.

Recommended Ranges of Key Nutrients

There appears to be insufficient data upon which to identify any necessary nutrient modifications.

Therapeutic Feeding Principles

Feline pancreatitis is an emerging disease that was rarely diagnosed before 1990. Most practitioners are more familiar with treating the acute form of pancreatitis in canine patients. Classically, food is withheld from canine patients with moderate to severe acute pancreatitis followed by gradual reintroduction of oral intake of foods high in carbohydrates but low in fat and moderate in protein.

There are problematic aspects of using this approach in cats suffering from this disease. First, as anorexia is one of the most common clinical findings in cats with pancreatitis, patients often present with evidence of malnutrition. Further fasting will only serve to worsen the extent of malnutrition in these patients. In addition, idiopathic hepatic lipidosis (IHL) is a common concurrent disease or sequelae of feline pancreatitis and withholding food from a patient with IHL would be contraindicated.

Classically food has been withheld from patients with moderate to severe acute pancreatitis with the aim of reducing pancreatic stimulation and thereby presumably reducing pancreatic secretions. Recently this dogma has been challenged in management of human patients. There is evidence that management schemes designed solely to promote pancreatic rest and minimize secretions have succeeded only in achieving pain relief and have not been shown to have an impact on patient outcome.³

Therefore, voluntary food intake should be encouraged in patients in which oral intake is not contraindicated due to persistent nausea and vomiting. Patients who refuse food or have inadequate voluntary intake should be evaluated as candidates for assisted feeding. Ideally they should receive a complete and balanced diet by the enteral route. Even patients with severe pancreatitis and persistent vomiting are able to tolerate jejunostomy tube feeding. However, when enteral feeding access is unobtainable in a patient in which assisted feeding is indicated, parenteral nutritional support should be initiated.

■ **Treats** – The recommendation for dogs recovering from pancreatitis is to avoid commercial treats or table foods and scraps that are high in fat. It is unclear whether a similar recommendation should apply to cats recovering from this condition; however, it may be prudent to avoid very high fat items such as fat trimmings from meat, fried foods, or cream. Acceptable treats would include lean meats or fish (e.g., baked chicken breast, tuna packed in water), low-fat dairy products, and fresh fruits and vegetables (with the exception of grapes and onions).

■ **Tips for Increasing Palatability** – Unless there are clear indications for feeding a fat-restricted food (<30% fat, energy basis), diet selection should

be predicated on finding a complete and balanced cat food that is acceptable to the patient. Adding some warm water to a dry food or slightly warming a canned food may enhance acceptance.

■ **Diet Recommendations** – Most cats diagnosed with pancreatitis will present with a history of anorexia. It is essential to monitor the patient’s food intake, especially when transitioning from assisted feeding, to ensure that the patient’s voluntary consumption is adequate. The goal will be to find a diet that the patient eats readily, is tolerated by the gastrointestinal tract, and is appropriate for any concurrent condition that the patient may have (e.g., inflammatory bowel disease, liver disease, diabetes mellitus). Patients should be monitored for food acceptance, weight maintenance, and recurrence of clinical signs.

For patients in good body condition, feeding portions should be based on previous caloric intake. For underweight patients, calories offered should be increased by 20% above previous intake to promote weight gain during convalescence and adjusted as necessary based upon response. For overweight patients, a weight reduction program should be prescribed once the patient has fully recovered from pancreatitis.

Client Education Points

- All members of the household should understand that there is a potential risk of recurrent disease. They should be made aware of any dietary and feeding recommendations and the reasons for them. Of particular importance is monitoring the patient’s food intake and body condition to enable early detection of anorexia and weight loss.
- When a patient is under- or overweight upon discharge from the hospital, there should be a discussion of what additional nutritional management will be necessary in the coming weeks to ensure a return to an optimal body weight, and why taking such steps will be beneficial for the patient.

Common Comorbidities

It is not uncommon for feline patients to be diagnosed with concurrent pancreatitis and inflammatory bowel disease. These patients may benefit from a novel protein/limited antigen or hydrolyzed protein diet. Most patients diagnosed with concurrent pancreatitis and IHL will require assisted feeding. Adequate food intake is necessary for resolution of IHL and cats with this condition generally exhibit insufficient voluntary intake. Cats with hepatic failure, regardless the underlying etiology, may require dietary modification including protein restriction. Pancreatitis may also occur concurrently in cats with diabetes mellitus (see pages 30–31).

Interacting Medical Management Strategies

Patients with moderate to severe acute pancreatitis will require aggressive fluid resuscitation and supportive care that can include colloid support, antiemetics, gastroprotective agents, and analgesics. While pain control is an important aspect of the medical management of pancreatitis, some analgesic agents can cause gastrointestinal ileus. Ileus can depress a patient’s appetite and therefore delay the return of voluntary intake or complicate the delivery of enteral nutrition in a patient receiving tube feeding. Ileus can be addressed by weaning the patient off of analgesic medication as soon as feasibly possible or switching to a medication that has fewer gastrointestinal side effects.

Monitoring

Patients that either needed to regain or lose weight after discharge from the hospital should have their weight monitored to ensure that appropriate progress is being made. Any future visit to the clinic, regardless of purpose, is an opportunity to inquire about the patient’s dietary management and a chance to reinforce previous feeding recommendations.

Algorithm – Nutritional Management of Feline Pancreatitis

