Treatment Options for Canine Pancreatitis

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Background

Pancreatitis is a potentially fatal disease which occurs commonly in dogs. The disease is challenging to diagnose as symptoms (vomiting, anorexia and abdominal pain) tend to be common and nonspecific. IDEXX Reference Laboratories' recent introduction of the Spec cPL® (canine pancreas-specific lipase) Test, provides a rapid and accurate diagnosis of pancreatitis. Once diagnosed, pancreatitis can be effectively and appropriately managed to decrease patient morbidity and mortality. There are a variety of treatment options available. Disease severity varies with etiology and local or systemic complications, thus treatment should be individualized.

Fluid Therapy

Intravenous fluids are the mainstay of therapy for pancreatitis. Initially fluids should correct dehydration over the first 12–24 hours, while also meeting maintenance needs. The fluid rate should be adjusted frequently to account for ongoing losses (e.g., vomiting, diarrhea, ascites) and to correct fluid, electrolyte and acid-base imbalances. If needed, colloidal support can be given in the form of fresh frozen plasma, hetastarch or dextrans (10–20 mL/kg/day). Plasma will provide α-macroglobulins to scavenge activated proteases within the serum; it also provides clotting factors and is indicated if there is evidence of disseminated intravascular coagulation (DIC). However, human studies showed no improvement in the clinical course or mortality with plasma administration.[1]

Pain Management

Analgesic therapy should be considered for abdominal pain in every animal with suspected or confirmed pancreatitis. Intravenous or subcutaneous opioids are typically utilized while the patient is hospitalized. Alternatively, intraperitoneal infusions of lidocaine or bupivacaine mixed with sterile saline can be administered. Options for outpatient pain control include fentanyl patch, tramadol or butorphanol.

Nutritional Support

Although nutritional support for pancreatitis has been debated in veterinary medicine, human literature recommends nutritional support. In uncomplicated pancreatitis, the vomiting patient can be held NPO (fasting) for 24–48 hours with subsequent gradual reintroduction of a low-fat diet when vomiting subsides. While NPO does provide a "rest" for the pancreas, most veterinary patients have been anorexic for >48 hours at the time of presentation, thus further withholding of nutrition is likely detrimental.

Alternatively, nutritional support can be provided by total parenteral nutrition (TPN) or enteral nutrition (EN). Experts recommend enteral nutritional support in all patients with pancreatitis. EN stabilizes the gut barrier, improves enterocyte health and immune function, improves GI motility and prevents catabolism. Enteral nutrition can be provided by a variety of feeding tubes, including nasogastric (NG) or nasoesophogeal (NE) tubes, esophogostomy tubes, gastrostomy tubes or jejunostomy tubes. Jejunostomy tubes bypass the pancreas and can be used in patients when vomiting cannot be controlled. Endoscopically placed jejunostomy tubes have been described in dogs and provide an opportunity for EN without prolonged anesthesia and surgery. While TPN will support the rest of the body, the GI tract still starves as it receives nutrition from the intestinal lumen. In severe pancreatitis, TPN can provide most of the caloric requirements but microenteral nutrition should be added to feed the intestine. Microenteral nutrition is trickle feeding a liquid diet through a feeding tube (NG, NE, esophagostomy, gastrostomy or jejunostomy) to support the cells of the intestinal epithelium, while avoiding stimulating pancreatic enzymes that larger volumes would cause. However, human studies have shown EN to be well-tolerated with fewer complications and less cost than TPN.[2,3]

Other Treatments

Other potential therapies for pancreatitis include antiemetics, antacids, antibiotics and dopamine. Antiemetics will help control vomiting and allow for earlier EN. Choices include ondansetron (Zofran®), dolasetron (Anzemet®), metoclopramide and chlorpromazine. Antacids can either be an H2-receptor antagonist (ranitidine or famotidine IV) or a proton-pump inhibitor (pantoprazole IV).

Pancreatitis is usually a sterile process in dogs and antibiotics are not indicated. Rarely, antibiotics may be used if a pancreatic abscess is present or there is evidence of bacterial translocation from the gastrointestinal tract. In research settings, dopamine at low doses (5 μg/kg/min) maintains mesenteric blood flow and limits increased microvascular permeability.[4] Currently there are no clinical studies that adequately evaluate the role of dopamine in pancreatitis.

Monitoring

During hospitalization, pancreatitis patients must be monitored closely as their status can change rapidly. Electrolytes, acid-base status, azotemia, icterus and coagulation status should be reevaluated regularly (e.g., every 24–48 hours in patients with severe disease). Abdominal ultrasound can be repeated intermittently to evaluate for the development of, or changes in, pancreatic pseudocysts and/or abscesses. Spec cPL® concentrations will fall as pancreatic inflammation resolves and can be repeated as often as every two to three days in severely ill, hospitalized patients to help determine if the pancreatitis is improving. In more stable patients, the Spec cPL Test can be repeated every one to two weeks.

Long-Term Management

Chronic management of pancreatitis will vary depending upon the severity of the disease. Single, acute, uncomplicated episodes may only warrant initially avoiding high-fat meals with a return to a normal maintenance diet. However, patients with repeated episodes of acute pancreatitis or evidence of chronic disease should be maintained on a fat-restricted diet. Drugs associated with pancreatitis (e.g., potassium bromide, L-asparaginase, azathioprine, furosemide, tetracycline, aspirin, sulfa drugs) should also be avoided in these patients. There is debate about supplementing oral pancreatic enzymes for patients with chronic pancreatitis. In a recent study, 57% of dogs followed six months after a single, acute episode of pancreatitis had evidence of either ongoing inflammation (increased cPLI) or decreased functional acinar cells (decreased TLI) despite resolution of symptoms.[5]

Conclusion

Patient prognosis is guarded in many cases of pancreatitis. However, rapid diagnosis and implementation of appropriate therapy early in the course of disease will reduce patient morbidity and mortality. Once a predisposition for pancreatitis is identified, chronic monitoring with the Spec cPL Test may be warranted, especially if changes are made to dietary therapy and/or pancreatitis-predisposing drugs are used.

Should you have additional questions regarding canine pancreatitis and/or treatment options, please contact IDEXX's Reference Laboratory at 888-433-9987, option 4 (Internal Medicine).

References

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