Key Nutritional Factors in Treating Pancreatitis

Gastrointestinal (GI) problems are one of the leading causes for which pets present to veterinary hospitals. Veterinary professionals know the key challenge with a pet that has GI dysfunction is to determine whether it is an emergency or potentially serious problem versus a chronic or intermittent issue.
The GI tract is known for its resiliency, and the veterinary health care team has seen numerous pets with clinical signs of acute vomiting and/or diarrhea resolve uneventfully, sometimes without any supportive care. However, this is not the case for all acute GI events—some may be life-threatening disorders that, if not identified and treated, could lead to poor patient management and/or death of the pet.

Acute pancreatitis is an important differential diagnosis for vomiting and abdominal pain in canines. Pancreatitis is a less common diagnosis in cats because of the challenges in diagnosing this condition in felines. Over the past 20 years, however, clinical and pathologic reports are finding an increase in the diagnosis of feline pancreatitis.

KEY NUTRITIONAL FACTORS
Following the veterinarian’s diagnosis of pancreatitis, the vomiting and/or diarrhea and pancreatitis will need to be managed. When managing a patient nutritionally, the health care team should be knowledgeable of key nutritional factors and their impact. This management of pancreatitis should consider the following:

Begin feeding sooner: Enteral nutrition is the most potent stimulator of intestinal mucosal regeneration. In addition, enteral nutrition may decrease cytokine production, modulate the acute phase response, decrease catabolism, and preserve protein. Experimental models of pancreatitis in dogs have shown a benefit of early enteral nutrition compared with parenteral nutrition; enteral nutrition decreases bacterial translocation and downregulates the severity of inflammation. More recently, studies in humans have suggested that gastric feeding (as opposed to jejunal feeding) is well tolerated and safe, with no exacerbation of pain. The addition of antiemetics should also aid in the prompt institution of enteral feeding.

Water: Water is extremely important for patients with acute vomiting and pancreatitis because life-threatening dehydration may result from excess fluid loss and the patient’s inability to replace the lost fluid. Patients with persistent nausea and vomiting should be supported with SC or IV fluids rather than PO fluids. Additionally, cases of moderate to severe dehydration should be corrected with appropriate parenteral fluid therapy.

Electrolytes: Gastric and intestinal secretions differ from extracellular fluids in electrolyte composition, so their loss can result in systemic electrolyte abnormalities. Dogs and cats presenting with vomiting and diarrhea may have abnormal serum potassium, chloride, and sodium concentrations. Serum electrolyte concentrations are beneficial in tailoring appropriate fluid therapy and nutritional management of these patients. Mild hypokalemia, hypochloremia, and either hypernatremia or hyponatremia are the electrolyte abnormalities most commonly associated with acute vomiting (and diarrhea). Initially, electrolyte disorders should be addressed and corrected with appropriate parenteral fluid and electrolyte therapy. Patients experiencing vomiting and/or diarrhea should begin nutritional therapy that ideally contains levels of potassium, chloride, and sodium above the minimum allowances for normal dogs and cats. Recommended levels of these nutrients are 0.8% to 1.1% potassium (dry matter [DM]), 0.5% to 1.3% DM chloride, and 0.3% to 0.5% DM sodium.

Digestibility: In managing pancreatitis nutritionally, it is recommended that the diet be highly digestible or at least 85% digestible on a DM basis (DMB).
Protein: Nutritional therapy for patients with pancreatitis should provide protein at levels of 15% to 30% DMB for dogs and 30% to 40% DMB for cats. In the duodenum, free amino acids (i.e., phenylalanine, tryptophan, and valine) are a strong stimulus for pancreatic secretion—even more so than fat. Excess dietary protein should be avoided, but adequate protein should be provided for recovery and tissue repair.

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Fat: Solids and liquids higher in fat empty more slowly from the stomach than do similar foods with less fat. Fat in the duodenum stimulates the release of cholecystokinin, which delays gastric emptying. Foods with less than 15% DM fat for dogs and less than 25% DM fat for cats are appropriate for dietary management. Obese and hypertriglyceridemic patients recovering from pancreatitis should receive low-fat foods (≤10% and ≤15% DM for dog and cat foods, respectively). This will help to reduce fasting serum triglycerides.

Fiber: Foods containing gel-forming soluble fibers should be avoided in patients experiencing vomiting and/or diarrhea because these fibers increase the viscosity of ingesta and slow gastric emptying. These fibers include pectins and gums (e.g., gum arabic, guar gum, carrageenan, psyllium gum, xanthan gum, carob gum, gum ghatti, and gum tragacanth). Generally, the crude fiber content should not exceed more than 5% DM. Prebiotic fiber, such as beet pulp and flax seed, helps to restore the balance of bacteria in the gut.

Food form and temperature: Moist foods are considered to be advantageous because they reduce gastric retention time. For the same reason, the veterinary healthcare team should educate clients to warm foods to between room and body temperature (70°F to 100°F [21°C to 38°C]).

Ginger: Ginger has been associated with a reduction in nausea and vomiting. The University of Maryland Medical Center (UMMC) website has information on ginger and its relation to reduced vomiting as a result of motion sickness in humans. Ginger may also decrease the severity and duration of nausea during chemotherapy (in human patients). The UMMC website also reports preliminary studies suggesting that ginger may lower cholesterol and help prevent blood from clotting. Ginger in the nutritional management of canine patients is aimed at soothing and calming the GI tract of these patients.

Omega-3 fatty acids: Omega-3 fatty acids help break the cycle of inflammation associated with pancreatitis.

CONCLUSION
GI signs are known to be a major reason owners bring their pets to the hospital. It is essential for veterinary technicians to identify these clinical signs, perform a complete history and evaluation, and assist the veterinarian in the diagnosis of pancreatitis based on these signs. Nutritional management is a crucial part of pancreatitis management. Certain key nutritional factors play a role in managing vomiting and diarrhea in cats and dogs—through enteral and parenteral nutrition—and veterinary nurses should recognize the circumstances and reasoning for the key nutritional factors to ensure a positive outcome for patients with pancreatitis. TVN

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