Pancreatitis and Exocrine Pancreatic Insufficiency in Cats and Dogs

A PowerPage Presented By

Many dogs present with acute pancreatitis in a severe episode. Cats are much more likely to have chronic, subacute forms. The diseases present diagnostic and therapeutic challenges and treatment is largely supportive. For this reason, it can be difficult to study these diseases for boards. This PowerPage reviews the key clinical, diagnostic, and therapeutic aspects of pancreatitis in dogs and cats. A brief discussion of exocrine pancreatic insufficiency (EPI) follows. EPI is a lower priority disease to study but is much more straightforward and worth a quick review as it also tends to show up on boards.

Relevant Pathophysiology

Canine pancreatitis is almost always sterile. The etiology is not known, but these risk factors should raise your suspicion:

- Fat - obesity, fatty meals, hyperlipidemia
- Systemic inflammation, trauma, ischemia
- Endocrine diseases - hyperadrenocorticism, diabetes mellitus
- Drugs - azathioprine, l-asparaginase, tetracycline
- In cats, the causes of pancreatitis are not as well understood

Clinical Signs

Dogs

- Mainly GI signs: vomiting, diarrhea, anorexia, **cranial abdominal pain**. A dog that hunches in a "praying posture" is a diagnostic clue for pancreatitis
- Severe necrotizing pancreatitis can cause hypovolemia, fever, tachycardia, jaundice, and the systemic inflammatory response syndrome (**SIRS**)

Cats

- Tend to have non-specific lethargy and anorexia and may or may not have any of the other GI signs listed above for dogs

Diagnostic Tests

- There is very little on routine bloodwork that will be absolutely diagnostic for pancreatitis
- Serum amylase and lipase are nonspecific and unreliable but may be markedly elevated
- Ultrasound is the imaging test of choice. Machines and sonographers have improved greatly in recent years for identifying evidence of pancreatitis in dogs and in cats with moderate to severe pancreatitis
- The most sensitive test is considered the pancreatic-specific lipase immunoreactivity (cPLI or fPLI for canine and feline)
- No test for pancreatitis is perfect, and it is particularly difficult to diagnose mild pancreatitis in cats. Ultrasound and PLI tests are the two most useful tests

Treatment

Dogs - Acute Pancreatitis

- Treatment is largely supportive and can be controversial, but it is generally agreed that delaying feeding, post-duodenal feeding by tube, and/or feeding a NO fat diet is helpful
- Hospitalization and aggressive intravenous fluid therapy is indicated
- H2 blockers (i.e. Ranitidine) and anti-emetics
- Analgesics
- Antibiotics are only indicated if pancreatic necrosis or sepsis is suspected
- More controversial options include plasma, heparin and corticosteroids

Treatment for chronic pancreatitis in dogs is to maintain a low-fat and highly digestible diet and to monitor closely for signs that require intervention.

Cats- Acute Pancreatitis

There is no specific treatment for feline pancreatitis. Identification and treatment of any underlying disease is critical. Supportive treatments include:

- Pain management
- Antiemetics
- Antibiotics
- H2 blockers
- Other less commonly used options include calcium gluconate, dopamine, insulin, and ductal decompression

Exocrine Pancreatic Insufficiency

Key Points

- Most common in German Shepherds, Collies and English Setters
- Polyphagia, diarrhea and weight loss in a young animal

Relevant Pathophysiology

Exocrine pancreatic insufficiency (EPI) is a syndrome characterized by inadequate synthesis and secretion of digestive enzymes by the exocrine pancreas resulting in inactivity of digestive enzymes in the lumen of the small intestine. Pancreatic acinar atrophy is the most common cause of EPI in the dog. Chronic pancreatitis is the most common cause of EPI in cats. This results in malassimilation of nutrients (fats, carbohydrates, proteins, vitamins, trace elements) and small intestinal bacterial overgrowth (SIBO).

Clinical signs and Diagnostic Tests

- Small bowel diarrhea with voluminous, yellowish or gray feces, polyphagia, pica, weight loss, and dermatological problems
- Routine bloodwork is usually normal
- Trypsin-like immunoreactivity (TLI) or pancreatic specific lipase immunoreactivity (PLI) will be low (< 5 ug/l)

Treatment

- Exogenous pancreatic enzyme supplementation is the cornerstone of treatment of canine and feline EPI.
    - Powdered pancreatic extracts are usually adequate
- Parenteral cobalamin, vitamin K and oral vitamin E supplementation
- Highly digestible, low-fiber diet