Pancreatitis, an inflammatory condition of the exocrine pancreas, is a multifactorial disease in cats with variable clinical course and outcome. Feline pancreatitis is more common than many practitioners realize as the ante-mortem diagnosis can be challenging.

Prevalence

Pancreatitis in cats has been recognised since the late 1800s and is now diagnosed frequently. A recent study published in The Journal of Veterinary Pathology found that two thirds of cats presented for post-mortem, irrespective of the cause of death, had histological evidence of pancreatitis, including nearly half of apparently healthy cats. Chronic pancreatitis was more common than acute pancreatitis (60% versus 15.7%). [De Cock et al 2007]

Although the prevalence of clinically significant pancreatitis is unlikely to be this high, these findings suggest that pancreatic inflammation occurs with a wide variety of clinical conditions and potentially explains why mild pancreatic lesions are common even in clinically healthy animals.

Cats with other common ailments, including diabetes mellitus, inflammatory bowel disease, cholangiohepatitis and hepatic lipidosis, often have concurrent pancreatitis that can be overlooked.

Clinical Signs

Cats with pancreatitis typically present with non-specific signs of illness including lethargy, decreased appetite, dehydration and weight loss. These symptoms could easily be attributed to other diseases. Vomiting and abdominal pain are hallmarks of this disease in dogs, but in cats vomiting may be absent or intermittent and abdominal pain is rarely recognized. Diarrhoea can be associated with pancreatitis or secondary to concurrent gastrointestinal disease. Icterus, fever and a palpable abdominal mass may be found on clinical examination.

Diagnostic Imaging

Radiographs are an important diagnostic tool when evaluating sick cats, especially if they present with vomiting. In cats with pancreatitis, abdominal radiographs may show a loss of detail in the cranial abdomen, shifting of abdominal organs, and in some cases suggestion of a mass in the cranial abdomen. However, these findings are rather subjective and a conclusive diagnosis of pancreatitis is not possible by abdominal radiography alone.

Abdominal ultrasonography is also a valuable tool when evaluating sick cats for evidence of pancreatitis. In addition, ultrasound allows evaluation of other organs. This is important because it is common for cats with pancreatitis to have liver and/or intestinal disease concurrently. As technology has improved, it is no longer sufficient just to visualize the pancreas or an enlarged pancreas to diagnose pancreatitis on ultrasound. Changes in pancreatic parenchymal echogenicity, evidence of peripancreatic fat necrosis and fluid accumulation are supportive of pancreatitis. Recent studies have shown ultrasound to be 24% to 67% sensitive and 73% specific for the diagnosis of pancreatitis. [Forman et al 2004]

Laboratory Findings

Routine laboratory findings in cats with pancreatitis may be normal, non-specific or attributed to concurrent conditions. CBC changes most commonly seen in cats with pancreatitis are non-regenerative anaemia, leukocytosis and leucopenia. Increased liver enzymes, hyperbilirubinaemia, hyperglycaemia, azotaemia, electrolyte imbalances and hypocalcaemia can be seen on a complete biochemical profile. Serum activities of amylase and lipase are not helpful in diagnosing pancreatitis in cats. Serum trypsin-like immunoreactivity (TLI) concentration is specific for exocrine pancreatic function and is the test of choice for diagnosing exocrine pancreatic insufficiency in cats. However, in cats with clinical signs of pancreatitis, serum TLI concentration has been shown to be poorly associated with the histopathological diagnosis and has an overall sensitivity of 28% and specificity of 75% for the diagnosis of pancreatitis. [See the review article by Xenoulis and Steiner 2012]
During the last decade, a pancreatic lipase immunoreactivity (PLI) assay has been developed, validated and evaluated for the cat [see Forman et al 2004]. Lipases originate from a variety of cells, including hepatic, gastric, and pancreatic, and all have the same role: hydrolysis of triglycerides. Depending on the individual assay, many or all of these will contribute to the total serum lipase activity measurement. Consequently, these assays are not specific for pancreatitis. The various lipases may have the same function, but they have a different amino acid sequences allowing immunoassays to be developed that detect the individual proteins.

Doctors Jörg Steiner and David Williams, of the Gastrointestinal Laboratory at Texas A&M University, developed an immunoassay that detects the unique structure of pancreatic lipase. This leads to its major advantage: specificity. This original feline PLI (fPLI) assay was based on polyclonal antibodies raised in rabbits and was available exclusively through the laboratory at Texas A&M University.

In a recent study the fPLI assay was shown to be the most accurate test for diagnosing pancreatitis in cats. The sensitivity (ability to detect pancreatitis) of the fPLI test in cats with moderate to severe pancreatitis was 100%. In cats with mild pancreatitis the sensitivity did decrease to 54%, resulting in an overall sensitivity of 67%. The specificity (ability to rule out pancreatitis) of the fPLI test was 100% in healthy cats and 67% in symptomatic cats with histologically normal pancreata with an overall specificity of 91%. [Forman et al 2004]

This original fPLI assay is no longer available; however, collaboration between the university and IDEXX Laboratories saw the development of a refined assay, Spec fPL®, that became available in 2008. Spec fPL® uses recombinant peptide as the antigen and monoclonal antibodies for improved consistency with commercial manufacturing. This assay is available exclusively through IDEXX Reference Laboratories.

A rapid, in-clinic, semi-quantitative test read by visual inspection was also developed to estimate the feline pancreatic lipase concentration in serum: SNAP® fPL™. These devices use the same methodology (ELISA) and monoclonal antibodies as used for the quantitative reference method (Spec fPL®). In many parts of the world, where it is not possible to obtain an acceptable turn-around-time for Spec fPL®, this has particular utility.

Recently, the University of Leipzig compared the performance of SNAP® fPL™ with Spec fPL® and published their results as an abstract at the ECVIM Congress 2012 [Herrmann et al 2012]. Cats with a clinical suspicion of pancreatitis (n=111) were admitted to their teaching hospital and pancreatic specific lipase was measured with both SNAP® fPL™ and Spec fPL®. The evaluation of both tests revealed a very good agreement of 98% when Spec fPL® was ≤ 3.5 μg/l and 90% when Spec fPL® was ≥ 5.4 μg/l.
Concurrent conditions

It is very common for cats with pancreatitis to have other concurrent conditions. The term “triaditis” has been used to describe the complex of cholangiohepatitis, inflammatory bowel disease and pancreatitis. Hepatic lipidosis and pancreatitis commonly occur together. Chronic pancreatitis is identified at necropsy in approximately 50% of diabetic cats. Therefore, it is recommended that a Spec or SNAP® fPL™ test be performed in cats with liver and/or intestinal disease and in newly diagnosed and hard to regulate diabetic cats.

Prognosis

The prognosis for cats with pancreatitis is directly related to the severity of the disease. Patients with mild chronic pancreatitis may do well long-term, but may also develop intermittent episodes of severe disease. Patients with acute, severe disease, especially if systemic complications are present, have a poor prognosis. Pancreatitis may complicate management of concurrent diseases in cats such as diabetes mellitus. It also has been shown that cats with concurrent acute pancreatitis and hepatic lipidosis have a poorer prognosis than cats with hepatic lipidosis alone. Therefore, diagnosis and management of the pancreatitis may be critical to the successful management of these other conditions.

References


