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Treatment Recommendations For Feline Liver Disease.

Feline liver disease

Feline cholangitis/cholangiohepatitis complex is one of the most significant disease processes in cats. The term “complex” embodies many different disease processes, each with its own symptoms and treatment protocol. The 4 main processes are:

- Acute cholangiohepatitis
- Chronic cholangiohepatitis
- Lymphocytic portal hepatitis
- Biliary cirrhosis

Acute cholangiohepatitis is a suppurative disease process of the liver, most commonly seen in young to middle-age cats. Because of its acute suppurative nature, clinical signs commonly include febrile and jaundice with vomiting and diarrhea for a duration of approximately 5 days. Acute cholangiohepatitis patients are normally the most severely ill, of the 4 main complex types.

Acute cholangitis/cholangiohepatitis is almost always of bacterial origin, with enteric isolates being the most common culprits. Pancreatitis and inflammatory bowel disease have also been indicated as eliciting agents. A chemistry panel often reveals a moderate increase in ALT, ALP and bilirubin, while the CBC commonly shows an elevated WBC with a left shift of 30-50%.

“Ultrasound and interventional ultrasound are important means of definitively diagnosing acute cholangitis/cholangiohepatitis. An ultrasound-guided core biopsy of the liver can be performed for both histopathology and aerobic/anaerobic cultures.”

Cats suffering from the remaining process types normally have less severe symptoms, but they have been sick for a longer period of time. They commonly have other disease processes including pancreatitis and inflammatory bowel disease. These other diseases may be responsible for the immune-mediated destruction of the liver that is commonly seen with the chronic form.

Cats with lymphocytic portal hepatitis are usually ill for months or years. These animals will have intermittent episodes of jaundice and vomiting which are cyclic and self-resolving.

Biliary cirrhosis is the end-stage of three previously mentioned disease processes. This is a rare condition in the cat because most cats succumb prior to this stage or are successfully treated.

Hepatocellular thyrotoxicosis is of primary concern. Thyroid hormones have a direct toxic effect on liver cells and stimulate increased liver enzyme activity. Also, increased intestinal motility secondary to hyperthyroidism can cause increased oxygen utilization and thus hepatic hypoxia ultimately leading to hepatic dysfunction. However, an acute cholangiohepatitis cannot be fully ruled out without biopsy. Owner compliance (and patient compliance) with tapazole treatments should be evaluated. Tapazole doses may need to be increased or other treatment modalities explored (thyroidectomy, radiation).

Hepatic Lipidosis is an accumulation of fat in the hepatocyte cytoplasm and can be primary or secondary to a myriad of hepatic diseases. The sonographic appearance of lipidosis is uniform, diffuse hyperechogenic parenchyma producing a “snow on grass” appearance. In other words, we don’t know what is growing underneath i.e. cholangiohepatitis, lymphoma ... Fine needle aspirate is the safest way to rule out lymphoma (or diminish the suspicion) and obtain some cells to define inflammation. U.s. guided biopsies can tell more about architecture and fibrosis. However, lipidotic livers like to bleed due to poor tissue integrity, lack of tissue hemostasis, and possibly compromised systemic hemostasis due to poor hepatic function. The practitioner must decide if the case warrants the risk and to what degree the lipidosis on sonographic presentation defines that risk.

Starvation, diabetes, obesity and malnutrition are primary predisposing factors with a “mixed bag” of hepatic disease to complicate the presentation often the case. Concurrent pancreatitis, IBD, or triaditis often is also found during the sonogram. SAP elevation is usually more prevalent with lipidosis and lymphoma while sALT may trail along with concurrent hepatocellular damage. The inverted profile is more often the case with inflammatory disease.

- 1) **IV Fluids: Non lactate fluids** (lactate need hepatic transformation)+ 20mequ/L KCL max cri 0.5 mequ/kg/hr +/- Kphosphate if hypophosphatemic (0.011-0.017 mmol kphos/kg/hr over 6-12 hrs) + 2ml/liter of B-complex vitamins.
- 2) **amoxicillin** 5-10 mg/lb bid, **fluoroquinolones** (baytril 20 mg sid/ 5kg cat), **cephalosporins** (cephadroxil 20 mg/kg bid) for potential suppurative hepatopathy and decreasing ammonia levels as well as covering for hepatic helicobacter. **8-week** duration has been suggested preferably based on fna or biopsy obtained culture results.
- 3) **metronidazole** 3-5mg/lb bid for anti-inflammatory and antimicrobial (anaerobic) effects; also decreases ammonia produced by intestinal microbes
- 4) **pepcid** 5mg sid-bid 30 minutes before meals
- 5) **Enteral feeding** (234 kCal/day for 5kg cat) in small frequent meals through an esophagostomy or PEG tube (over 15 min) with a recovery diet such as Hills a/d, Royal Canin Recovery RS or Iams Maximum Calorie (enhanced protein and fat levels) Hepatic lipidosis requires higher protein levels quickly for successful recovery. Slurry should be warmed and dose increased over 3-5 days to RER levels. It is easiest to blend all medications and nutrition in the am and divide into 4-6 daily feedings. Flush peg tube with 15 ml warm saline. Pretreatment with **cisapride** (2.5-5 mg/cat) or **metaclopramide** (0.4 mg/kg q 8hrs) can prove helpful.
- 6) **Vit K-1** 0.5-1.5mg/kg every 12 hours for 3 doses max if coagulation abnormalities or signs of hemolysis
- 7) **Liver support** with **actigall** (1/6 of 300 mg capsule/day), **thiamine** (100-200 mg/day), **taurine** (500 mg day), **zinc** (8 mg day), **vitamin E** (30 IU/kg/day), **carnitine** (500 mg/day) is indicated with lipidosis or diffuse liver disease. Additionally, **Kaopectate** (3-6 cc/day) is used for gut hydrogen trapping, and **Lactulose** (0.25-2.5 ml/kg/day) to trap nitrogen in gut bacteria. This can be mixed in the feeding slurry at the beginning of the day and blended, dividing and heating to body temp tid.
- 8) **Milk Thistle (silymarin)** at 70-100mg bid aids in hepatocyte regeneration inexpensively
- 9) **Prednisone** if non-suppurative disease with significant lymphocytes +/- plasma cell infiltrates in the fna or biopsy sample. 2 mg/kg sid tapered to alternate day dosing. Do not use azothiaprime (immuran) in cats.

Monitor weight and appetite every 2 weeks, and ALT, SAP, albumen, serum protein, every 4 weeks for the first 6 months, then every 4-6 months. Repeated biopsy or fna is the best way to monitor the disease and response to therapy yet may not be practical.

Common drugs to avoid in hepatic disease: Halothane, sulphonamides, diazepam, azole antifungals, Phenobarbital, tetracyclines, erythromycin or Baytril combo with theophylline or cisapride, cimetidine with theophyllin or metronidazole or chloramphenicol. **SEDATE WITH CAUTION** if lipidosis is present. Mask down sevo/isoflo is this practitioner's preference for biopsy or fna in fractious cats.

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"Make every obstacle an opportunity." Lance Armstrong

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