Chronic ALT/ALP/bilirubin elevation in a stable dog

If liver biopsy is not affordable for the owner, the below treatments may be safely tried empirically to address some potential etiologies.

Recommended Diagnostics:

-Leptospirosis testing via SNAP Lepto test, urine PCR, and/or titers (ideally baseline and convalescent titers 2-4 weeks later

-Coagulation panel (PT and PTT)

-Abdominal and thoracic radiographs

-qPLI or SNAP PLI

Treatment

-Amoxicillin and enrofloxacin OR cephalexin and enrofloxacin to cover for bacterial cholangitis or cholangiohepatitis Treat a minimum of 4-6 weeks AND 2 weeks beyond resolution of liver enzyme elevations. Toxoplasmosis would be covered by the clindamycin as well.

-A 4 week trial of doxycycline may also be tried for possible leptospirosis, especially if renal involvement.

-Ursodiol (10-15 mg/kg PO daily or divided twice daily)

-Denamarin (20 mg/kg PO daily or SAM-e at 20 mg/kg daily) on an empty stomach

-Lactulose (0.5 to 1 ml/kg PO every 8 hours) if any signs of hepatic encephalopathy and/or evidence of liver failure on bloodwork (hypoalbuminemia, hypocholesterolemia, hypoglycemia). Give in combination with long-term amoxicillin or neomycin.

-Vitamin E (200 IU PO daily for small dog, 400 IU PO daily for medium dog, and 600 PO IU daily for large dog)

-Vitamin K (2 mg/kg SC daily -NOT ORALLY)

-Ondansetron (0.5 to 1 mg/kg every 8 hours for nausea)

-Omeprazole (1 mg/kg PO BID to decrease risk of GI ulceration secondary to portal hypertension)

-Spironolactone (if ascites): Start at 2 mg/kg PO daily and increase gradually every few days (if not responding) to 4 mg/kg PO daily to effect. Avoid abdominocentesis unless patient is uncomfortable or having respiratory distress. Administration of colloids is recommended during abdominocentesis. Removal of all abdominal fluid should be avoided. Only remove enough to improve patient comfort level or respiratory effort.

-Avoid NSAIDs

-Discontinue potentially hepatotoxic drugs: phenobarbital, sulfonamides, lomustine, azathioprine, azoles, etc.

-If PLI is positive, treat for pancreatitis and retest liver values.

-Consider treatment for liver flukes with praziquantel and fenbendazole

-Consider portosystemic shunt if microcytosis, ammonium biurate crystalluria, concurrent cryptorchidism, and/or renomegaly

-Diet: highly digestible, non-protein restricted, high quality diet. Consider a prescription liver diet or one without copper if likelihood of copper storage hepatopathy is high, such as in a Labrador retriever or a Bedlington terrier, or if signs of hepatic encephalopathy are not controlled with medical management.

If no response to treatment and biopsy is still declined, a trial of prednisone at 2 mg/kg PO daily is recommended with owner consent and acceptance of risk of worsening an undiagnosed condition, particularly infection Taper slowly over 4-6 weeks but do not discontinue until 2 weeks after resolution of elevated liver enzymes. Discontinue immediately if liver values worsen at any time.

Additional Considerations

-Question owners about possible toxicities: xylitol, Sago palm, blue-green algae, acetaminophen, mycotoxins, Amanita mushrooms, pennyroyal oil, etc

-Copper-associated hepatopathies occur most commonly in the Bedlington terrier, Labrador, West Highland white terrier, Skye terrier and Doberman pinscher.

-Gallbladder disease is very common in the Shetland sheepdog

-Chronic hepatitis occurs commonly in the cocker spaniel, Labrador retriever, Doberman pinscher, English Springer spaniels, and Standard poodle