

PRACTICAL APPROACH TO THE DIAGNOSIS AND MANAGEMENT OF SMALL ANIMAL HEPATIC DISEASES

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Clinical signs of disorders of hepatobiliary system

- Extremely variable and not pathognomonic.
- Severity of the clinical signs dose not necessarily correlate with the prognosis or degree of liver injury.
- Associated signs: GI, renal, neurological, hematopoietic systems and dermatological.

Tests for hepatobiliary disorders—status evaluation

- Serum hepatic enzyme activity: alanine transaminase(ALT, SGPT), aspartase transaminase(AST, SGOT):
 - . Hepatocyte and biliary epithelium membrane associated.
 - . Reflects hepatocellular injuries, should be assessed in terms of number of the fold elevation from normal.
 - . Not able to distinguish hepatic diseases or secondary nonhepatic disease involvement
 - . Drugs may cause increased ALT levels: Acetaminophen, Azathioprine, Barbiturates, Carprofen, Doxycycline, Diazepam, Erythromycin, Glucocorticoids, Halothane, Griseofulvin, Ibuprofen, Itraconazole, Ketoconazole, Mebendazole, Phenobarbital, Phenytoin, Sulfonamides, Tetracycline, Thiacetarsemide, Trimethoprim–sulfa drugs…
- Serum enzyme activity: alkaline phosphatase(ALKP), r–glutamyltransferase(rGT):
 - . Hepatocyte and biliary epithelium membrane–associated.
 - . Reflects cholestasis.
 - . ALKP activity also detectable in osteoblasts, intestinal mucosa, renal cortex, placenta.
 - . Drugs may cause increased ALKP levels: Anabolic steroids/ Androgen, Azathioprine, Barbiturates, Cephalosporins, Cyclophosphamide, Erythromycin, Estrogen, Glucocorticoids, Halothane, Griseofulvin, Ibuprofen, Phenobarbital, Phenytoin, Progesterone, Testosterone,



Tetracycline, Thiabendazole, Trimethoprim-sulfa drugs...

- Conditions might presenting increases in serum hepatobiliary enzyme levels in the absence of primary liver diseases:
 - . Drugs: corticosteroids, anticonvulsants...
 - . Endocrinopathies: hyperthyroidism, hypothyroidism, hyperadrenocorticism, DM
 - . Neoplasia: adenocarcinoma(mammary), sarcoma(hemangiosarcoma), hepatic metastasis
 - . Hypoxia / hypotension
 - . Muscular injury / bone disorders
 - . Pregnancy

Tests for hepatobiliary disorders ? functional evaluation

- Bile acid
 - . Suspected occult hepatic diseases, hepatomegaly and microhepatia, chronic weight loss, CNS signs
 - . Simultaneous preprandial and postprandial evaluation
 - . Most sensitive biochemical indicator for congenital portosystemic shunts

Categories of canine and feline liver diseases

- Parenchymal disorders
 - . Reversible hepatocellular injuries
 - . Acute and chronic hepatitis and cirrhosis
 - . Hepatic amyloidosis
 - . Hepatic abscesses and granulomas
 - . Hepatic storage diseases
- Biliary tract disorders
 - . Diseases of the gall bladder . Cholestasis
 - . Cholangitis . Biliary cystic disease and biliary atresia
- Neoplasia
 - . Hepatocellular neoplasia / nodular hyperplasia
 - . Cholangiocellular neoplasia
 - . Hepatic carcinoid / hepatoblastoma
 - . Primary vascular and mesenchymal neoplasia
 - . Hematopoietic neoplasia
 - . Metastatic neoplasia
- Vascular liver disorders